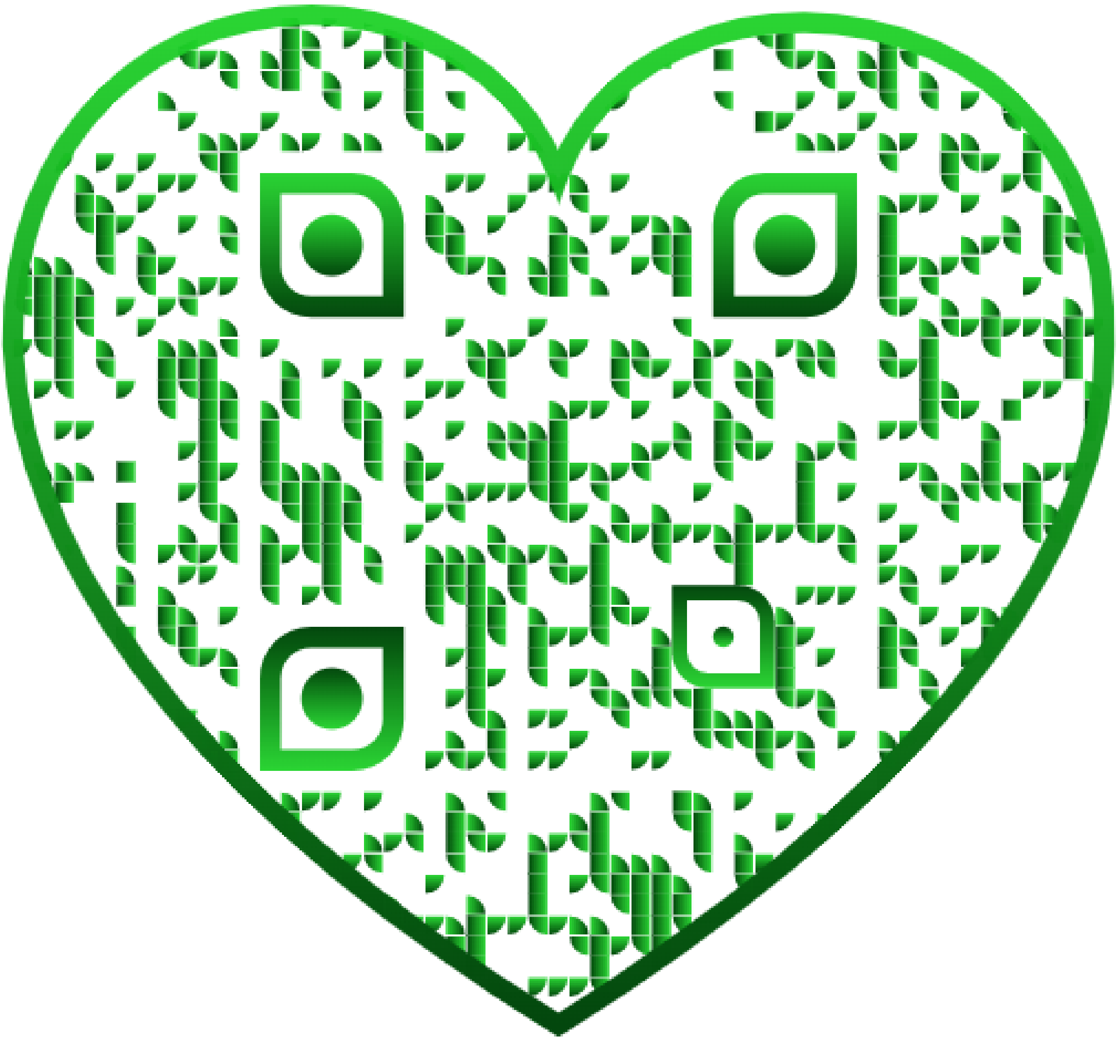
Bloomberg Businessweek

August 2025

# How Citizen Musk Threatens Elon Inc.

A Bloomberg Publication



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PHOTOGRAPH BY NORIKO HAYASHI FOR BLOOMBERG BUSINESSWEEK

President Donald Trump’s trade war is coming for companies like zipper maker YKK ▷ 66

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**Re: Business Answers**

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# Contributors

● **Mark Milian** is deputy editor of *Bloomberg Businessweek*. He and his family (dogs included) are up to date with their vaccines. ▷ 8

● *Businessweek* senior reporter **Max Chafkin** has been covering Elon Musk for almost two decades and co-hosts the podcast *Elon, Inc*. **Edward Ludlow** is co-host of *Bloomberg Technology*. The one word they would use to describe the Tesla CEO is "unpredictable." ▷ 32

● **Madison Muller** is a health reporter and **Devin Leonard** is a senior writer, both at Bloomberg News. The process of writing their profile of Hims & Hers Health CEO Andrew Dudum included reading his father's book *What Your Mother Never Told You: A Survival Guide for Teenage Girls*. ▷ 40

● During his shoot at Texas State Technical College, San Antonio-based photographer **Anthony Francis** got a demonstration of the force a tiny hydraulic lift can generate when pressed with just two fingers. ▷ 53

Correction: In "American Mid" (July 2025, page 70), Jared Soares should have been credited for the photo of hotel executive Shruti Gandhi Buckley; Hampton Inn provided the photo of a hotel in the United Arab Emirates.

# Cover

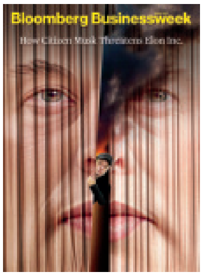

Photo illustration by Nicolás Ortega; photos: Bloomberg (1); Getty Images (2). Ortega says he wanted his image to contrast Elon Musk's legacy with what Musk is doing now—"to show almost in an ironic Greek tragedy what is happening."

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# A More Sickly Economy

● **By Mark Milian**

For generations, parents everywhere recoiled at the sight of red blotchy spots on their child's face. Although kids are prone to all sorts of weird rashes, the most feared ones were accompanied by a high fever; a dry, hacking cough; red, watery eyes; and small lesions inside the cheeks. Over the next several days, the rash would inch its way down the body, eventually reaching the feet. The measles virus is incredibly contagious, and in the worst cases it can require hospitalization, cause permanent disabilities and sometimes result in death.

Another group also worried about measles: employers. Companies lose days of productivity when workers take off to care for sick children. Besides saving lives, this was another reason it was smart for the US government to help fund the development of an inoculation and why President John F. Kennedy signed a law expanding access to childhood vaccinations. In the decade after the measles shot arrived in 1963, the number of cases was cut in half, and according to the US surgeon general, the direct health-related savings during that time were at least $1 billion annually, adjusted for inflation. That number doesn't account for productivity loss from overtaxed parents or the unspeakable tragedy of deceased children who could've grown up and contributed to society.

Before widespread vaccinations, rich countries were poorer countries, with citizens who were sicker, less productive and more likely to die younger. Promoting vaccine use isn't merely an ethical or public-health issue; it's good economic policy. "Vaccines are one of the most cost-effective solutions in public health," says Sachiko Ozawa, an associate professor at the Eshelman School of Pharmacy at the University of North Carolina at Chapel Hill.

After decades of gains, the developed world is going backward. In upper-middle-income and high-income countries, vaccination rates over the past decade have essentially plateaued or are declining, and more people are dying from preventable diseases, according to a study published last year in the journal *Vaccine*. In England the National Health Service reported that childhood coverage in 2024 had fallen by every measure, with several reaching their lowest levels since 2010. By contrast, countries supported by Gavi, the Vaccine Alliance, a public-private partnership that funds health efforts in poor economies, have improved coverage substantially and averted millions of deaths.

The stakes in poor countries are higher, because more people will die. But in the dispassionate calculus of pure economics, the costs of declining vaccination rates in places such as Canada, the UK and the US are exorbitant. A 2019 measles outbreak in Clark County, Washington, cost $47,000 per person infected, according to a 2021 study in the journal *Pediatrics*. Most of the financial burden fell on the health-care system, but the next largest cost was to productivity. The toll would've been much greater if anyone had died—as two did in a measles outbreak this year in West Texas. The US set a dark milestone in July, when the number of cases so far in 2025 reached the highest level of any year since 1992.

Even though the rate of return is good, wealthy governments are growing weary of investments in preventive care and in some cases are adding fuel to the sort of misinformation that stokes vaccine skepticism. In June the UK sharply reduced its contribution to Gavi, and US Health and Human Services Secretary Robert F. Kennedy Jr., a longtime vaccine critic, said America would stop funding it entirely—part of government-wide cost cuts championed by Elon Musk (page 32) that disproportionately targeted foreign aid.

At home, a Kennedy-appointed immunization panel within the Centers for Disease Control and Prevention withdrew support for inoculations containing mercury, used in about 5% of all flu shots to prevent bacteria, citing debunked concerns about the preservative's safety. And restrictions on federal data imposed by President Donald Trump's administration are making it tougher for the health-care industry to track infectious diseases and prepare for outbreaks (page 11).

With vaccination rates declining, other sicknesses loom as both significant public-health and economic disasters. In the US and many other parts of the world, the flu last season was among the most contagious and pernicious strains in at least a decade, and expectations for the next one beginning in the fall are grim. Experts are also worried about dwindling immunization rates against whooping cough, says Bryan Patenaude, an associate professor of health economics at the Johns Hopkins Bloomberg School of Public Health. (The school is supported by Michael Bloomberg, founder and majority owner of *Bloomberg Businessweek*'s parent, Bloomberg LP.)

It all adds up to a public-health policy that's not just bad on its merits but also astonishingly at odds with efforts to accelerate growth and solve problems such as the mounting national debt. Rich countries can afford to absorb some higher costs to care for sicker populations, but another Covid-scale pandemic or a severe strain of flu could critically injure their economies, Patenaude says. "A lot of it comes down to opportunity cost," he says. "Prevention is often a lot cheaper than treatment." Ⓑ

■ ILLUSTRATION BY BRYSON LEE

RANGE ROVER

REFINED BEYOND MEASURE

Vehicle shown: 2025 Range Rover. © 2025 Jaguar Land Rover North America, LLC

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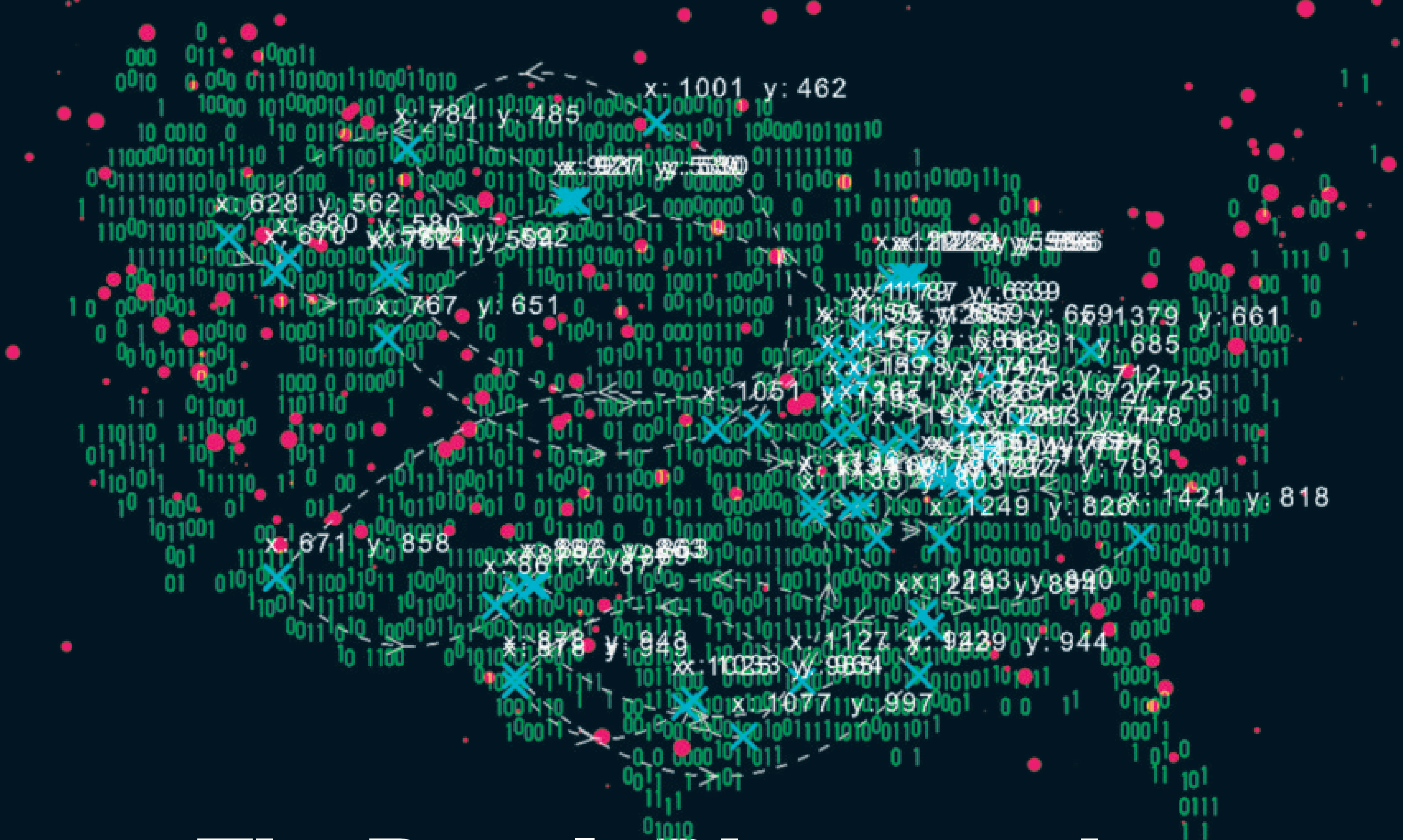
# In Context

A new way to think about the world



# The Data Is Disappearing

● **By Molly Smith**

Doctors are struggling to treat patients with complex sexually transmitted infections as certain types of health data are being purged from public websites. Insurers won't be able to pull fresh data from a frequently consulted online repository of climate and weather disasters. School districts are left to work with a scaled-down version of the nation's report card, which is critical for setting benchmarks for student achievement and allocating resources.

These datasets are collateral damage in President Donald Trump's effort to downsize the US government. The so-called Department of Government Efficiency says it's canceled almost 12,000 contracts totaling about $44 billion in savings, plus billions more in terminated grants. Then there are the hundreds of thousands of government workers who've departed through voluntary resignations, firings and other exits, leaving several agencies gutted and gaping holes in others. Among them are linchpins of the sprawling federal statistical system, including the Bureau of Labor Statistics and the Census Bureau, as well as a host of lesser-known offices that research science and engineering, transportation, health and more.

Some data collection was already at risk before Trump reclaimed the White House, largely because of shrinking budgets and staff departures. Government number crunchers have also had to contend with fewer people responding to surveys, rendering efforts to assemble representative datasets more costly and time-consuming—a problem that extends beyond the US. "We're down to a lesser stream of data," says Nancy Potok, who served as US chief statistician in the first Trump administration. "Are we going to get just little dribbles and drabs? Or is the faucet eventually going to be completely shut off?"

Businesses rely on government statistics to inform salaries and wages and investment decisions. Officials at the Federal Reserve and the White House need data to guide monetary and fiscal policy, such as where to set interest rates and tariffs. Statistics also matter to the general public, which wants to know about the best school districts, outbreaks of infectious diseases and emergency preparedness for natural disasters. ▶

■ ILLUSTRATION BY BLOOMBERG BUSINESSWEEK

◀ Experts say economic data is mostly still reliable, but the trend is troublesome. At the BLS, which produces some of the nation's marquee numbers on inflation and employment, funding has slumped about 20% since 2010 in real terms, and Trump's fiscal 2026 budget proposal would shave an additional 8% from both its purse and personnel. Those reductions will force the BLS to concentrate on data deemed most important by the White House's Office of Management and Budget. Separately, the bureau decided some months ago to stop certain data collection and production for its consumer and producer price indexes, saying existing resources could no longer support those activities.

"The threats to economic data have accelerated," says Jed Kolko, who was undersecretary for economic affairs at the Department of Commerce in the Biden administration. "The risk is that these economic statistics that we rely on get worse over time," as in less accurate, subject to larger revisions and more reliant on imputations and estimates in place of direct survey data, he says.

A group of Democratic senators recently wrote to the BLS and its overseer, the Department of Labor, to ask how many positions the BLS has lost and to identify each change to a statistical program since Trump took office. "These numbers affect nearly every household in the country—impacting Social Security, wages, interest rates, and how businesses and families make financial decisions," they wrote in a June 10 letter.

"The Administration is committed to every federal agency and subagency meeting their statutory requirements by publishing accurate, timely, and relevant data for the American people," said White House spokesman Kush Desai.

One of the first places to see data go dark was the Centers for Disease Control and Prevention, where a January executive order to excise diversity, equity and inclusion language at federal agencies led to the removal of upwards of 200 datasets from public websites, according to the *New England Journal of Medicine*, while others ceased to be updated.

Among those affected: an online tool that allows doctors to mine decades of CDC surveillance data on HIV, tuberculosis and sexually transmitted infections as well as a repository for research on pregnancy risks. The Department of Health and Human Services will stop collecting data on emergency room visits related to substance abuse.

Dr. Sarah Nosal, president-elect of the American Academy of Family Physicians, remembers the day in early February when she noticed that popular CDC mobile apps on treating STIs and providing contraception methods wouldn't load. She was in an exam room with a patient who had recurrent yeast infections, a condition that requires a medication regimen that varies from case to case.

The apps are back up and running, but Nosal says she won't consult them anymore because the data is compromised and incomplete. She and her colleagues are having to spend more money and effort contacting experts for information that used to be at their fingertips, and she worries patient care is suffering. "We probably don't even know the things we're doing wrong yet," Nosal says. "We are harming individuals because I'm not as well informed as I was about the best care for my patients."

Just as the administration has zeroed in on data pertaining to diverse populations, anything related to climate has also been targeted. The National Oceanic and Atmospheric Administration has retired its popular database of climate and weather disasters that caused at least $1 billion in damage. The database had been a key tool for insurance agencies and reinsurers in tallying losses and educating the public about disaster risks—something that would have been widely used in the coming months as central Texas rebuilds from devastating July flooding.

Separately, NOAA announced that it would stop distributing readings from a meteorological satellite program by the end of July—information that helped forecasters at the US National Hurricane Center predict whether a storm would rapidly intensify. (A 2024 paper published by the National Bureau of Economic Research calculated that improvements in hurricane forecasting have saved the US economy $5 billion per storm that makes landfall.) The White House has also removed environmental mapping tools from government websites, which activists used to protect communities vulnerable to pollution and climate change.

Some of the impacts to federal data have been more subtle. The Department of Agriculture released quarterly trade data a few days late in June and without its usual comments and analysis. The statistical agency within the Department of Education, which has been stripped down to around three employees, from about 100, still hasn't posted a publication schedule, as required by federal regulation.

Although the federal statistical system needs funds and staff to function, many stats geeks say throwing money at the problem won't make it better. If anything, the steep cuts present technocrats with an opportunity to rethink the US statistical system, says Julia Lane, author of *Democratizing Our Data: A Manifesto*. It's frequently been criticized for its decentralized nature, spanning many government departments and creating inefficiencies that are hobbling efforts for a more modernized, coherent structure. Lane, a professor emerita at New York University, argues part of the solution to improving the federal statistical system may come from outside the government. "I don't think we're doing anyone any service by trying to preserve a dead system," she says. "We need to pivot to green shoots that are going to cost less and be much more valuable."

Part of that requires leaning on administrative data, such as state unemployment records and tax information from the Internal Revenue Service, that are more efficient and cost-effective to collect. While the private sector can also step in to fill certain holes, experts say it doesn't compare to the nation's gold standard federal statistics. "The private sector collects data for its own purposes and needs to profit from those data in order to justify the expense of collecting them," says Ron Wasserstein, executive director of the American Statistical Association, an advocacy group. "So if we're going to have accurate, reliable, trustworthy, unbiased data and reporting, it's not going to be able to come from the private sector." Ⓑ *—With Zahra Hirji, Jessica Nix, Lauren Rosenthal, Brian K. Sullivan and Skylar Woodhouse*

# Male Fertility By Mail

**● By Adam Popescu**

Last summer, Alexander McKinnon was always feeling tired. "I would lie on the couch at 2 in the afternoon and fall asleep," he says. The founder of a biotech startup in Boston, he initially thought it was the byproduct of his demanding job, but as time passed, his exhaustion didn't subside. By September his doctor had run a blood test and found his "super fatigue" was tied to low levels of testosterone. McKinnon was prescribed steroids to boost his energy. The trade-off was that the injections would severely reduce his sperm count.

McKinnon, 32, and his wife weren't ready to start a family, but they didn't want to risk their ability to do so in the future. "That's when I froze my sperm," he says.

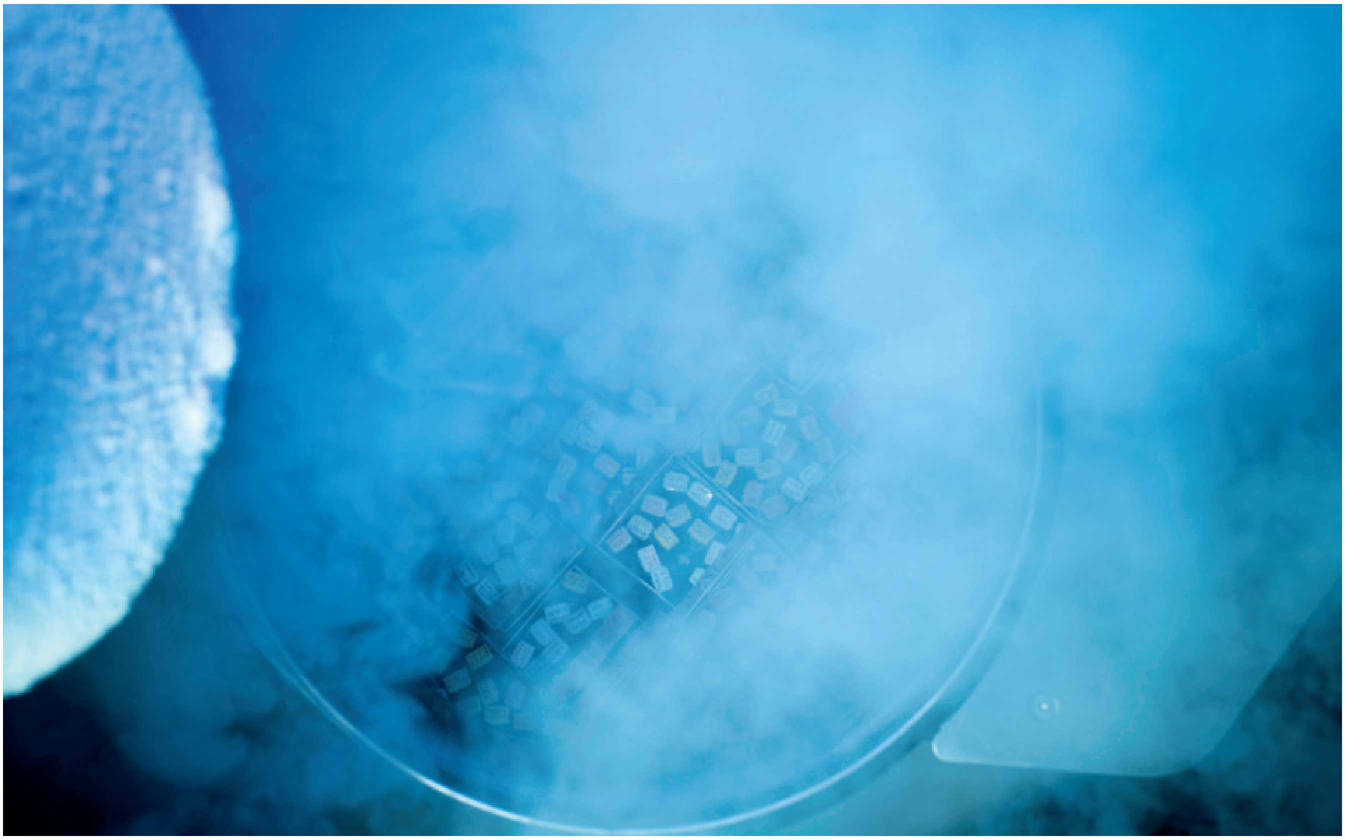
Sperm banks have been around for decades, but the advent in the past several years of low-cost chemical preservatives administered at home, which can extend the life of a sample for days, lowered the barriers to access by eliminating the awkward trip to a clinic or doctor's office. Changing attitudes among health-conscious men are helping create a mini industry of direct-to-consumer startups that take semen by mail for storage and offer reproductive health analysis through an app.

McKinnon used a do-it-yourself kit he ordered from a company called Legacy. It comes with a small plastic cup like the ones at the doctor, a vial of pink fluid that acts as a preservative, a rugged army-green zippered container and a padlock to prevent tampering during transit. After collecting his sample, McKinnon dropped it off for overnight shipping.

Legacy is among the biggest US startups in a growing male infertility market estimated at $4 billion a year. The New York-based company has 40,000 customers and is backed by $50 million from venture capitalists and celebrity investors including Justin Bieber.

Khaled Kteily, the founder of parent company Give Legacy Inc., emphasizes convenience as a main driver of the sperm-services-by-mail business. "All you need is an iPhone and five minutes," he says. At $100 to $150 a year to collect and bank sperm in facilities located on the US East Coast, Legacy undercuts the prices of many traditional clinics. The differences are even starker when compared with the uncomfortable, invasive and costly process of egg retrieval and storage, which takes months and can run to tens of thousands of dollars. "When you compare that to the price of egg freezing, it's kind of wild," Kteily says.

Most men rarely give much thought to their fertility. The general lack of awareness masks the scale of a global problem. Average sperm counts worldwide are believed to be about half the level they were 40 years ago, according to a widely cited study from 2017. No one knows exactly why, but diet and stress are thought to be factors. That's why testing goes hand in hand with freezing, and there are numerous companies seeking ▶



■ PHOTOGRAPH BY JUSTIN MAXON FOR BLOOMBERG BUSINESSWEEK

**The cryostorage tank at Reproductive Partners in California**

◀ to make that process simpler. ExSeed Health Ltd., based in Denmark and the UK, sends kits to customers throughout Europe that allow them to test their sperm at home and see results on a smartphone.

The sperm-freezing startups are primarily targeting men concerned with family planning, facing age-related declines in sperm count, dealing with cancer or other health-related issues, or working in the military or other high-risk careers. Insurance plans increasingly cover these services, and many doctors are encouraging patients to consider them. Legacy says its advisers are in talks with Robert F. Kennedy Jr.'s team at the US Department of Health and Human Services but declined to provide details.

Reproductive Partners' Hupp freezing sperm

Keeping sperm alive used to be a big challenge. A raw sample generally needs to be evaluated by a medical professional within an hour. In 2018 a San Francisco Bay Area startup called Fellow began by using bicycle messengers to transport semen samples. Now it asks customers to use a proprietary preservative, which suppresses bacteria, before boxing them up and mailing them.

The preservative used by all the mail-in companies is known as a buffer medium. Think of it as a chemical bath, a nutrient-rich fluid that protects sperm cells from temperature fluctuation and keeps them viable until they can be frozen in the lab. Legacy says its solution loses 0.4% of the sperm per hour from a sample, and Fellow says its preservative and kit can keep a sample for as long as 52 hours.

Fellow, which has raised more than $40 million from investors, is used by 11 major hospitals, 40 US Department of Veterans Affairs medical centers and 2,500 clinics. "There's a cultural shift going on, and men care about what's happening in their bodies," says James Smith, a urologist at the University of California at San Francisco and Fellow's chief medical officer.

Wendy Chang, a reproductive endocrinologist at a fertility clinic in Beverly Hills, has embraced mail-in options as a way to broaden her patient base. She estimates that 5% to 10% of her male patients at Reproductive Partners Medical Group can't perform on demand in the office. "These services can be a good treatment for the anxiety of it all," she says.

Legacy's kit contains a preservative to keep sperm viable in transit

With a sample in hand, the next step is a cold plunge. According to Danielle Hupp, a lab manager and senior embryologist who works with Chang, the freezing process can take two to three hours. In a room filled with liquid nitrogen tanks, each about the size of a beer keg, Hupp says slow cooling is key to avoid stressing the sperm membranes. Frozen sperm need to reach -196C (-320F), from their typical testicular temperature of 34C. Ice crystals form when a liquid becomes frozen, so technicians add a special media containing a cryoprotectant before freezing to remove water from cells and protect the sperm from damage.

The normalization of male fertility care is something doctors are relieved to see. Conception works much better when both halves of the equation are aware of the roles they play, says Amin Herati, a urologist and director of infertility at Johns Hopkins University.

"My interest is starting the conversation early, since so many men deal with infertility," he says. "We need more empathy for what men go through, more options and support." Ⓑ

■ PHOTOGRAPH BY JUSTIN MAXON FOR BLOOMBERG BUSINESSWEEK. PRODUCT: COURTESY LEGACY ■ DATA: COMPILED BY BLOOMBERG

# Korean Stocks Have a Moment

**● By Youkyung Lee and Sangmi Cha**

Even as the K-pop heartthrobs of BTS wrap up their military service and plot their return to arenas worldwide, the hottest thing in South Korea lately has been its stock market. Global investors poured almost $3 billion into Korean equities in May and June, propelling the country's benchmark index up about 28% in the first half of the year, trailing globally only Slovenia's blue-chip index, a gauge of Zambian equities and a basket of 20 Polish stocks.

It's a dramatic turnaround for a place that's undergone huge political and economic turmoil in recent months: a declaration of martial law (rescinded hours later), a presidential impeachment and removal from office, and Donald Trump's tariffs, which threaten to wreak havoc on export juggernauts such as Hyundai, LG and Samsung. Despite those hurdles and the global malaise stemming from wars in the Middle East and Ukraine, investors are piling into Korean stocks because, they say, the country's business culture is poised for a sharp transformation. "Such movements are unstoppable once they start," says Kim Ki Baek, a portfolio manager at Korea Investment Management Co.

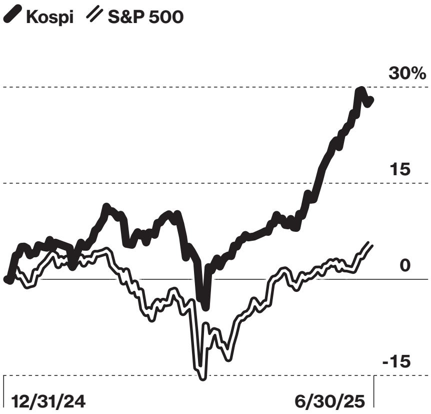
For decades the country's economy has been ruled by so-called *chaebol*, family-controlled enterprises that rose from the rubble of the Korean War seven decades ago. These companies, including the aforementioned giants and lesser-known outfits that make everything from K-pop hits to steel, have long been criticized for having weak corporate governance, stifling competition and skirting inheritance taxes. With support from authoritarian governments in the 1960s and '70s, they helped transform South Korea into an economic powerhouse, and today the top four companies account for more than half the value of the Kospi 200 Index.

But regulators and investors increasingly consider these companies a liability, responsible for what the market calls the Korea discount, the lower valuations of the country's equities versus those of their peers in Taiwan and Japan. Although the phenomenon has long been blamed on the proximity of the belligerent regime in North Korea, there's growing consensus that it has more to do with concerns about corporate governance at the chaebol.

Korea's recent turmoil has had at least one benefit: the expectation of more investor-soothing corporate legislation. Voters replaced ousted President Yoon Suk Yeol with Lee Jae Myung of the Democratic Party. With his party controlling parliament, he's got a far better chance of passing laws regarding the capital markets. Topping the lawmakers' agenda are measures aimed at stopping companies from benefiting founding families to the detriment of minority shareholders.

**South Korea's Benchmark Soars**

**Change in index value since Dec. 31, 2024**



During the campaign, Lee frequently pledged to lift the Kospi to 5,000, or about double its level at the time, and he's created an ad hoc "Kospi 5000" committee that's tasked with implementing his capital-markets promises. Even though reaching 5,000 anytime soon seems unlikely—the index hit 3,000 on June 20, a couple of weeks after the election—the pledge has filled investors with optimism. "At this stage, I don't think 4,000 is impossible," says Cha So-Yoon, an equity investment manager at Taurus Asset Management in Seoul. "That's because we have the fundamental support of the companies this time around."

Locals are (quite literally) invested in the outcome. Almost 30% of South Koreans now own shares, more than double the level in 2019, and they've become a powerful political force. Last year objections from retail investors helped scuttle a proposed merger of two independent affiliates of Doosan Group, a maker of construction equipment that calls itself Korea's oldest company. Around the same time, their protests spurred lawmakers to scrap proposed capital-gains taxes on small holdings of domestic stocks.

Investors know that changing the chaebol structure won't be easy. In 2015, Elliott Management failed in an effort to block the merger of two Samsung affiliates on concerns that the transaction undervalued a company in which the activist hedge fund held shares. Several former presidents have also tried to implement various reforms, but they've encountered strong resistance. For instance, the impeached president backed measures aimed at boosting shareholder returns, but they weren't binding, so chaebol directors rarely followed them.

Lee, who often says he's an "ant"—what small investors call themselves, in reference to their power when working together—is proposing mandatory changes. "The Democrats now will have a much easier time," says Jon Withaar, a fund manager at Pictet Asset Management in Singapore, praising the new president for "being so deliberate in trying to unwind the Korea discount."

Park Jinho, head of equity investment at NH-Amundi Asset Management Co., says one way to persuade the chaebol to accept the changes would be to avoid measures that their founders perceive as punitive. And he suggests lowering taxes on dividends or inheritance, which are among the world's highest, to offer the controlling families a way to diversify. "The conglomerates have contributed greatly to the Korean economy," Park says. "There should be policies that give them a fair way to accumulate wealth."

# Coffee Bandits Up The Ante in Brazil

● **By Sam Cowie**

Donizete Guidini was transporting 30 metric tons of coffee along a country highway in São Paulo on an April night when a car full of armed men forced him to stop. The hijackers directed him to a nearby gas station at gunpoint, stole the truck and cargo, and left Guidini blindfolded in a sugarcane field.

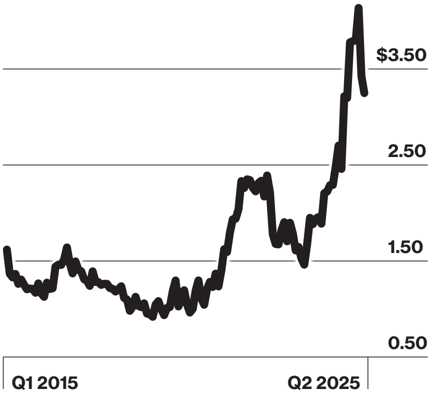
Brazil, the world's largest coffee producer and exporter, has long grappled with bean thefts by petty criminals and organized gangs alike. But with prices sharply elevated compared with past years, farmers and industry groups are warning that the harvest season that runs from May through September could go down as the worst heist year in recent memory.

Early this year, prices for arabica beans–the variety generally used for high-end brews–hit the highest level since 1977 following several disappointing harvests. Pressure has since eased slightly, but year-to-date prices are still about double the 2023 average. "Crime is an economic activity. From the moment you have a high-value-added coffee harvest, it becomes an attraction for criminals," says Guilherme Derrite, secretary for public safety of São Paulo.

With Brazil's harvest underway, industry groups in key coffee-growing regions are rolling out new protections and urging farmers to be extra vigilant. In April and May, for the first time, Cocapec, a coffee growers organization in São Paulo, distributed brochures to its roughly 3,000 members, warning them to take preventive measures before and during the harvest, including installing cameras, reinforcing gates, and controlling access to planting and storage areas. "Do not react to violence: In case of theft, prioritize the physical integrity of everyone involved," the bulletin from the coffee cooperative read. In May, Cocapec also introduced a free insurance service for members transporting beans to the cooperative's storage facilities between 6 a.m. and 7 p.m. for an added layer of protection.

**Coffee Jolt**

**Futures price of arabica beans, in dollars per pound**



Some of the incidents are like something out of a Hollywood film: In June armed thieves stormed a farm in Vermelho Novo, Minas Gerais, stealing 95 sacks of coffee, worth around 220,000 reais ($40,000), while holding farmworkers hostage. Others have been more under the radar, including reports of cargoes sneaked out of storage overnight or opportunistic thieves plucking beans directly from trees.

Experts say coffee is harder to trace than other goods commonly targeted by robbers in rural Brazil, such as cattle or farming equipment, making it attractive to thieves. Criminal groups quickly distribute the stolen beans to established buyer networks, limiting law enforcement's ability to recover it. In January criminals robbed the warehouse of Alessandra Peloso, a prize-winning coffee producer in Minas Gerais, stealing 163 sacks, weighing 60 kilograms (132 pounds) each. "They sell to small-time coffee roasters, all without documents, without paying taxes," she says. To prevent further robberies, she's since hired a night guard, added alarms and sirens, and put cameras "on everything."

The rise in thefts is just the latest trouble for Brazil's coffee sector. Despite high prices and strong global demand, Brazilian producers have seen their profit margins squeezed because of climbing fertilizer costs, logistics bottlenecks, pricing volatility and climate challenges. Last year's harvest was a big disappointment, hurt by excessive heat and drought, and this year's isn't looking much better for arabica. The situation is more positive in Vietnam, the world's second-largest coffee producer, which tends to grow more of the robusta bean variety used in instant coffee.

Still, it's not all bad news. Back in São Paulo, Guidini's hijacked cargo–worth an estimated 1.5 million reais–was recovered hours later at a rural property close to where the robbery took place, according to local reports. A 37-year-old man was arrested, and the case remains under investigation, officials said. Ⓑ —*With Dayanne Sousa*

■ ILLUSTRATION BY VALENTIN TKACH ■ DATA: COMPILED BY BLOOMBERG

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# Thailand's Abrupt Cannabis U-Turn

● **Text and photo by Gianmarco Di Costanzo**

When Thailand became the first Southeast Asian nation to decriminalize cannabis, in 2022, it ignited a "green rush," swiftly reshaping the economic landscape and challenging long-held cultural norms. Dispensaries proliferated in urban centers such as Bangkok, ballooning to more than 10,000 across the country. But the agricultural communities in the lush northern countryside are perhaps benefiting the most from the burgeoning industry–assuming the government doesn't shut the whole thing down.

In the mountains of northern Thailand, which are blessed with an ideal climate and fertile soil, generations of Hmong and other ethnic minorities have long tended the land, preserving an intimate knowledge of indigenous plants and sustainable cultivation practices. Historically these communities were linked to illicit opium cultivation, before they shifted to more wholesome crops including corn, tea and vegetables starting in the late 1960s.

Legal cannabis, a more than $1 billion-a-year industry in Thailand, offered them a lucrative pivot these past few years. Now the industry has been thrown into chaos after the Thai government announced an abrupt legislative backtrack in late June.

The country moved to restrict cannabis use to medicinal purposes by requiring prescriptions and to cap volumes at a 30-day supply per customer. Keen to crack down on a surge in cannabis tourism, smuggling and underage recreational smoking, Thailand is also expected to draft rules requiring that each dispensary have a doctor on-site; it might even move to reclassify the herb as a Category 5 narcotic.

With stricter controls on sales and distribution ahead, the mountainous communities and the operations' backers are bracing for real pain, including lower demand, rising regulatory costs ▶

A Hmong woman hangs freshly harvested plants in a drying room

◀ and widespread unemployment. Some Hmong farmers worry they'll have to revert to less profitable and dirtier crops, such as corn, where farmers traditionally burn the fields after harvest, contributing to northern Thailand's worsening air pollution.

Still, Chokwan Kitty Chopaka, president of Writing Thailand's Cannabis Future, an advocacy group, says she's hopeful the agricultural communities won't give up the practice altogether. "The Hmong people have always been the keepers of seeds," she says. "Hopefully they will continue to keep it safe." Ⓑ *—With Patpicha Tanakasempipat*

# VC's Third Rail: Chinese AI Startups

**By Bloomberg Businessweek**

The backlash came swiftly for Benchmark, one of Silicon Valley's top venture capital firms, after Bloomberg News reported in late April that it was investing in an AI startup founded in China. Republican senators framed the deal as Benchmark effectively aiding the Chinese government and suggested Congress should take action. Fellow venture capitalists said Benchmark was acting irresponsibly. "You're just investing into your enemy," says Delian Asparouhov, a partner at Founders Fund. "Why would we be funding the Russia space program in 1972? Why would we be funding the Chinese AI race in 2025? To me, those are the same questions. It just seems to be beyond the realm of logic."

Benchmark declined to comment. But the grumbling came as a surprise to Bill Gurley, a longtime partner at the firm who scaled back his responsibilities in 2020 and wasn't involved directly in the deal. In a May episode of *BG2*, his podcast, Gurley supported the firm's decision to lead a $75 million investment in Butterfly Effect, the creator of the AI agent Manus. The product, he noted, only operates atop large language models developed in the US, such as Anthropic's Claude; and the startup has offices outside China and doesn't store any customer data there. He rejected the notion that it posed a threat to US national security. "In not being a China hawk, people accuse you of being a sinophile. And there's a lot of room in between those things," he said.

Gurley didn't respond to a request for further comment. A person familiar with the deal, who asked not to be named speaking about private business matters, says Manus had already decided to leave China when it began investment discussions with Benchmark and has since shut down its offices in the country. The startup is now based in Singapore.

The investment, which quintupled Manus' valuation to $500 million, is a relatively small one at a time when tens of billions of dollars are regularly thrown at AI startups. But it highlights a widening philosophical divide in Silicon Valley over China, patriotism and the pursuit of profit. "No money into China until Xi sees the light or is replaced," says prominent venture capitalist Tim Draper, who invested in Chinese internet giant Baidu Inc. in 2000 but halted such investments after President Xi Jinping ushered in an era of tighter state control.

Until recently, US venture firms played a pivotal role in the development of China's internet industry, as investors looking to replicate successful US business models abroad plowed billions into Alibaba, Baidu, Didi and TikTok owner ByteDance. The trend peaked in 2018, when US venture investors participated in over $40 billion worth of Chinese deals, according to data company PitchBook.

But the mood began to shift when President Donald Trump took office in 2017 and continued in the Joe Biden years. The US adopted new tariffs and restrictions on investment in China, and some US firms severed economic ties to the country. Beijing also created new barriers for foreign investment that depressed tech deals. Last year, total funding for Chinese startups dropped by almost 40% from the year prior, and only 8.5% of VC rounds included foreign investors, the lowest in more than a decade, per PitchBook.

In January new US rules designed to curb investment in Chinese-owned semiconductor, quantum computing and AI companies took effect. The measures, a part of the Department of the Treasury's Outbound Investment Security Program, prohibit investors from backing AI systems designed to be used for the military, government intelligence or mass surveillance. Compliance falls on investors, who must assess risks and notify the Treasury when they do invest in sensitive areas.

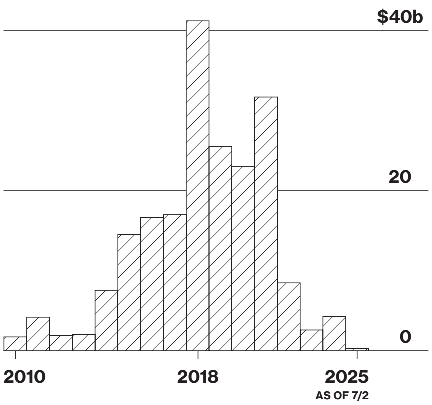
Benchmark hired lawyers to review its Manus investment and concluded it didn't need to file notice because the product is a consumer application, according to a person familiar with the matter who asked to remain anonymous because the information is private. But after Benchmark completed the deal, the firm received a letter from the Treasury, according to people familiar with the matter.

If the Treasury Department decides the investment violated policy, Benchmark would be forced to divest and could face additional criminal or civil penalties, including a fine twice the value of the transaction. Lawyers unconnected to the investment say it likely won't trigger such consequences, because Butterfly Effect is incorporated in the Cayman Islands. (Spokespeople for the Treasury and Manus declined to comment.)

The shifting landscape is presenting founders in China with a difficult choice: raise money from Chinese backers and focus on the domestic market, or sever ties with China to pursue global funding

**Cooling Off**

**Venture capital deal activity in Chinese companies with US investor participation**



■ ILLUSTRATION BY VIRGINIA GABRIELLI ■ DATA: PITCHBOOK

and users. Even taking the latter path doesn't guarantee a startup will escape suspicion. HeyGen Inc., an AI video startup founded in China in 2020, learned this when it relocated in 2022 to the US, where its founders had gone to college. Benchmark led an investment in HeyGen last year, valuing it at $500 million. Around the same time, the US government issued a report raising concerns about China's influence over the company. "I think it's disappointing to see that my Chinese heritage is treated as something for me to be ashamed of," HeyGen co-founder Joshua Xu told Bloomberg last year.

The wariness about China is rising at a time when firms such as Founders Fund and Andreessen Horowitz are increasingly focused on investments in US defense, industrial and aerospace companies. They've adopted a combative patriotism in the process. In 2023, Founders Fund's Asparouhov, 31, who's become one of the louder voices of this movement, co-founded the Hill & Valley Forum, which convenes policymakers, investors and founders in Washington to discuss national security. In remarks at the most recent event, and afterward, he questioned whether Benchmark has ties to the Chinese Communist Party. Other attendees followed suit, including Emil Michael, the former Uber Technologies Inc. executive recently confirmed as the Pentagon's chief technology officer. "It's not like there's not a plethora of US companies doing AI to invest in that are high quality," he said onstage.

Brad Gerstner, co-host of Gurley's podcast, said on the show that criticism of the Manus deal was xenophobic. (He didn't respond to a request for further comment.) Venture capitalists at several major firms echoed this view but declined to speak on the record to avoid wading into such a controversial topic. A Benchmark investor, who asked not to be named for similar reasons, says he had no concerns about the firm's ability to vet investments.

The industry hasn't lost its fear of missing out. Investors continue to visit China, even when they say they don't plan to back companies there in the near term. Following the Benchmark investment, Manus spoke to US firms about raising hundreds of millions more, according to people familiar with the matter, but it has since decided to focus on developing its product, according to one of those people.

Asparouhov says the reaction to Benchmark's investment likely deterred any US investors considering similar deals. "They got so much blowback," he says. Much of that blowback, though, has come from Asparouhov himself, and it's not clear how deep support for his viewpoint runs. Josh Wolfe, co-founder of defense tech investor Lux Capital, posted a message on X in early May criticizing Benchmark, but he removed it when *Bloomberg Businessweek* asked for further comment. "I deleted that after tweeting it reflexively out of ignorance," he wrote in an email, noting that he'd learned the startup's founders were trying to leave China. "I think this deserves more study rather than just criticism." Ⓑ *—With Kate Clark, Zheping Huang, Katie Roof and Lulu Chen*

# ● A Walk With

● By Joshua Brustein

**Raquel Urtasun**, CEO of self-driving truck startup Waabi, is getting big rigs ready for the road with the equivalent of augmented-reality glasses

Raquel Urtasun spent a few days in June working from a large tent in the Arizona desert. It came with a number of un-tent-like amenities, such as indoor plumbing and air conditioning to provide relief from the 110F heat, but its main appeal to Urtasun, who runs the self-driving truck startup Waabi, was its proximity to a 2-mile-long track where she can test her company's hulking autonomous vehicles. Both tent and track are located inside a private facility where companies can perform critical, and sometimes perilous, field research, from ramming cars into one another to carrying out controlled explosions. (To visit, I had to sign one form promising not to discuss certain details of any tests I happened to witness and another saying I was responsible for any Gila monster bites I might suffer.)

Waabi's tests don't have the inherent drama of blowing things up, but they're impressive in their own way, consisting of 17-ton driverless trucks maneuvering around physical and virtual obstacles. Urtasun founded the startup in 2021, years after the first companies began trying in earnest to build self-driving vehicles. The industry-standard formula was to drive around as an artificial intelligence system tracks what happens so it can learn from the experience. Waabi was launched with the idea that it could quickly catch up by using digital simulation. It created a sort of metaverse for trucks that Urtasun has dubbed "Waabi World," a name the company says is in no way a reference to the similarly named theme park in *National Lampoon's Vacation*.

At the facility, Waabi World collides with the real world: A self-driving truck circles a track while the company's software feeds it information about obstacles that don't exist. "It's the equivalent of putting on augmented-reality glasses," says Urtasun. Because the alternative would be to stage each scenario as though it were a scene in a movie, this has the potential to save considerable time and money.

Urtasun's pitch has helped Waabi raise almost $300 million from investors including Khosla Ventures, Nvidia, Uber and Volvo. Of course, attracting capital hasn't been a perfect predictor of success in the field; self-driving trucks and augmented reality are both technologies that have so far generated considerably more hype than impact. But the vision is clear: lower shipping costs, relief from driver shortages and better safety. Waabi plans to do its first commercial runs on public roads without safety drivers in its trucks sometime this year, which would make it among the first startups to do so.

We put on sunglasses and pink safety vests and head out to the track, Urtasun's Dolce & Gabbana sneakers gleaming in the sun as she describes her decades-long obsession with self-driving vehicles. A native of Pamplona, Spain, she started working on AI as an undergraduate, helping develop algorithms to process data pulled from photos. Actual autonomous vehicles seemed far away. "As a scientist, I love the challenge of such a complex problem," says Urtasun, 49. "I love the challenge when no solution is really close."

In 2017, Uber Technologies Inc. hired Urtasun to work with its autonomy group. She stayed until Uber announced in late 2020 that it was offloading the entire lab to Aurora Innovation Inc., a self-driving trucking startup. The initial hype cycle around self-driving vehicles had largely descended into its trough of disillusionment by that time, and Uber actually paid Aurora $400 million in the deal, taking a 26% ownership stake in return. Several months later, Urtasun started Waabi.

The company's trucks have a series of sensors built into the grilles and on horn-like protrusions jutting out above the windshields. In addition to helping the vehicle see, the sensors are designed to clean themselves when bugs smash into them. (This is a real issue on the Texas highways where Waabi has been doing commercial runs with safety drivers behind the wheel since 2023.) There's a guy in the driver's seat as we pull onto the track, his hands hovering over the wheel just in case, and another in the passenger seat. A computer under the second row of seats does the driving, and a trailer loaded with 11 tons of water simulates actual cargo.

From our vantage point, we can see the road, along with several screens that show how the truck's sensors perceive it. With the push of a button, what had just appeared to be a straight-ahead video feed begins showing a steady stream of computer-generated traffic passing in the left lane. We come around a curve to see a virtual cargo van disabled in the right lane. The truck quickly brakes, bringing us to a stop well short of impact. When we begin moving again, a motorcycle cuts us off, and we shift lanes to avoid a collision.

The demonstration is not particularly exhilarating. That's kind of the point. A good self-driving truck will change lanes and adjust speed in the same way a competent human driver would—that is, smoothly enough that a passenger fiddling with the radio would barely notice. Waabi's simulation could allow it to test how it would handle genuinely dangerous situations, but for those it probably wouldn't want its chief executive officer, two other employees and an outsider with a notebook along for the ride. (The company hasn't yet done testing without humans in the cab.)

Autonomous vehicles are still years behind the most optimistic projections, but some are good enough to operate commercial services on actual roads. Aurora began doing some driverless runs this year; still, the industry consensus is that the real action requires manufacturers to produce vehicles pre-equipped with self-driving technology. The first could come within two years; both Waabi and Aurora have partnerships with Volvo AB to do so at its plant in Virginia. Carriers would pay a premium to buy autonomy-ready vehicles, and startups would charge a per-mile fee. For now, Waabi isn't giving details about its commercial launch or discussing its longer-term projections about pricing. Regardless of how clever the tech is, the fate of autonomous trucking startups will ultimately be determined by those kinds of mundane details. "The previous four years we were very R&D-focused, technology-building and whatnot, but we also laid a lot of the foundations of the commercial side," Urtasun says. "It is the beginning now in the sense that the technology is ready to deploy, and then the next phase starts." Ⓑ

waabi
waabi

■ PHOTOGRAPHS BY CASSIDY ARAIZA FOR BLOOMBERG BUSINESSWEEK

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# In View

Our contributing writers’ guide to a changing landscape

# Trump’s NATO demands are a gift to Europe’s defense industry, says

**Wes Kosova**

USA
U.S. AIR FORCE
USA

■ PHOTOGRAPH BY BRE FURLONG FOR BLOOMBERG BUSINESSWEEK; PROP STYLIST: EMMA RINGNESS

Early this year, when Donald Trump was threatening to turn his back on NATO unless its members dramatically increased their annual contributions to the military alliance (“If they don’t pay, I’m not going to defend them”), his lieutenants traveled to Europe with an additional message from the president: Not only did Trump want each of the 32 NATO countries to bulk up their arsenals—he also expected them to buy American.

It might have been one demand too many. Although member nations ultimately appeased Trump in June by agreeing to boost their annual military spending to 3.5% of gross domestic product by 2035—and tossed in an additional 1.5% a year for defense-adjacent projects such as cybersecurity and infrastructure—their confidence in America’s commitment to the 76-year-old defense pact has been shaken. Rather than spend the money Trump squeezed out of them on a shopping spree for American guns and ammo, some European leaders instead see a chance to invest in weapons designed and manufactured at home, in hopes of one day luring customers from the US defense industry. Much like Airbus SE chipped away at Boeing Co.’s dominance in passenger jets and, improbable as it once seemed, eventually surpassed its larger US rival.

“The deal in previous times had been that European countries accepted buying significant high-tech weapons from the US, and in return there was an implicit contract that the US would be present on the continent and defend NATO territory,” says Guntram Wolff, a senior fellow at Bruegel, an economic research group in Brussels.

Those purchases helped make the US defense sector the largest and most lucrative in the world, with $318.7 billion in military equipment sales to foreign governments in 2024. Trump frequently complains that NATO is ripping off the US. What he doesn’t mention is that European nations are the leading buyers of American-made weapons. The bottomless need for armaments to help Ukraine fight Russia has driven record sales. The US accounted for 64% of arms imports by European NATO countries from 2020 to 2024, compared with 52% from 2015 to 2019, according to the Stockholm International Peace Research Institute (Sipri). Last year, European NATO members spent a total of $454 billion on defense, with the biggest share going to US companies.

That may, slowly, start to shift. “There is a very important debate across wide parts of the political spectrum in many European countries, about to what extent we need to increasingly emphasize and prioritize procurement in Europe,” Wolff says. “Including for the high-tech stuff where, at the moment, the dependency on the US is quite high.”

Several nations have already hit the brakes this year on major US arms purchases or are looking to alternatives made in Europe or elsewhere. After Trump’s trade threats and his jabs about turning Canada into the 51st US state, Canada announced in March that Prime Minister Mark Carney is reevaluating a $13 billion agreement to buy 88 Lockheed Martin Corp. F-35 fighter jets. His defense minister said the government would consider switching to fighters made by companies outside the US. “We should no longer send three-quarters of our defense capital spending to America,” Carney said in a June speech outlining the nation’s defense plans.

Poland, another regular buyer of US arms, negotiated a $6 billion deal for a fleet of K2 tanks from South Korea’s Hyundai Rotem Co. They’ll be deployed alongside US-manufactured M1A2 Abrams tanks that Poland purchased from General Dynamics Corp. And Denmark is weighing whether to choose a missile defense system developed in France and Italy over the US-made Patriot system from RTX Corp.

“Europeans are very reliant on the US defense industry. But I think because of the tariffs, because of President Trump’s attitudes toward NATO and his less-than-eager willingness to embrace the defense of NATO countries, European countries are increasingly going to prioritize investing in European defense firms,” says Todd Harrison, a senior fellow at the American Enterprise Institute, a conservative think tank in Washington. Harrison says a push to develop defense manufacturing in Europe would also help justify NATO’s lofty spending levels to a wary public—“by showing that the money is going to build industrial capabilities and create jobs in their own country rather than creating jobs in the US.”

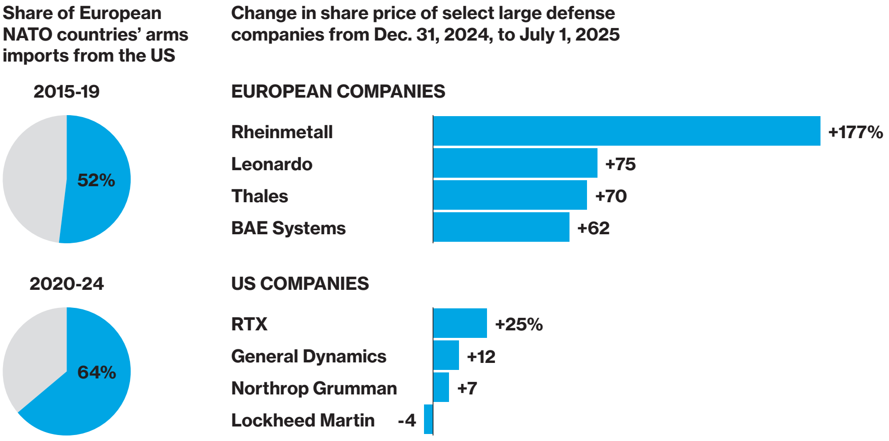
Other governments are closely watching Denmark’s decision, expected later this year, as a barometer of Europe’s mood. Copenhagen has long been a steadfast US supporter and customer. Denmark buoyed the F-35 program in 2016 with

**“There is a very important debate across wide parts of the political spectrum in many European countries, about to what extent we need to increasingly emphasize and prioritize procurement in Europe”**

a $3 billion order for 27 fighter jets and has stuck with it despite years of delays.

### Investors Bet Big on Europe's Arms Makers

Europe grew more dependent on American weapons after Russia's 2022 invasion of Ukraine. Now countries want to spend more of their surging military budgets on guns and ammo made at home



■ DATA: STOCKHOLM INTERNATIONAL PEACE RESEARCH INSTITUTE, BLOOMBERG

That loyalty is now being tested. Trump has outraged Danish citizens with his repeated threats to take over Greenland, an autonomous Danish territory. Hans Peter Michaelsen, an independent defense analyst in Denmark, says it's likely Denmark will turn down the Patriot and go for the European-built system. "It would be a political signal," he says, that it's time "to put new orders into the European defense industry."

In an emailed statement, White House deputy press secretary Anna Kelly said the military spending pledge Trump won from NATO members "will allow Europe and the entire world to benefit from peace through strength."

It's not clear whether NATO allies will make good on meeting the ambitious new spending goals or were merely mollifying Trump with a symbolic IOU that conveniently won't come due until long after he's departed the White House. Many countries would struggle to afford such a steep increase in military spending without falling afoul of the EU's limits on deficits and debt. In 2024 the average military burden for all NATO members was 2.2% of GDP, totaling about $1.5 trillion, according to Sipri. To hit the new target of 3.5% of GDP, defense spending for some NATO allies would have to triple.

Much as European leaders may dream of quickly rivaling the US as the world's go-to military supplier, it's likely years away. "If European NATO had the ability to flick a switch and develop that capability overnight, it's exactly what they'd want. But that's the kind of thing that takes a decade to build," says Andrew MacDonald, a specialist in defense budgets at Janes, a company that supplies intelligence on the defense industry.

MacDonald points to the Patriot, which outsells alternatives built by European companies. "I don't think there is an air defense system that has the range of capabilities that Patriot has," he says. "So right now, if you want those capabilities, you've got to buy Patriot." The same goes for other complex armaments that are increasingly in demand. Some European offerings lag US products in features, battle readiness and price. Another advantage US defense companies often have over the competition: the manufacturing capacity to deliver the goods. "If European countries want to spend money quickly, the obvious answer is to look to the US," MacDonald says, "because frankly, European productive capability can only expand so quickly."

Recently, though, even some of the largest US defense companies have had a hard time keeping up with demand as weapons shipments to aid Ukraine depleted US and European stockpiles. Denmark is still awaiting six of the 27 F-35 fighters it ordered from Lockheed almost a decade ago. Poland bought those South Korean tanks partly because US-made tanks weren't as easy to get. Buyers of the Patriot can wait years for delivery.

These delays may present an opportunity for Europe's defense companies to win customers in need of alternatives to US products that have long backlogs. They'd have better luck scaling up to do that if European governments decided to join forces, says Cynthia Cook, a senior fellow at the Center for Strategic and International Studies in Washington. "Notionally, European nations could get together. All of them together are as big as the US," she says. "Working together, they could conceivably have a defense industry that was more competitive—sort of a second among equals to the United States."

This would be tricky to pull off, in part because of clashing national priorities and sclerotic European bureaucracy, but also because the simple clarity of "Made in America" versus "Made in Europe" is no longer simple at all. US defense companies have formed numerous partnerships with European arms makers as they look to expand their global presence and market share abroad. "Our industrial bases are integrated in a way that meet NATO standards," says Dak Hardwick, vice president of international affairs for the Aerospace Industries Association, which advocates for the US aerospace and defense industry. "And the United States' manufacturing capability continues to be the best manufacturing capability of any NATO country."

Despite the hurdles, investors are betting on Europe's future as an arms producer. Shares in European defense companies have surged this year, far outpacing their larger US counterparts. Germany's Rheinmetall AG, a major producer of artillery ammunition, is up 177% this year.

It may be the last thing Donald Trump ever contemplated—that he would inadvertently feed the growth of a foreign military-industrial complex that one day could match America's. "We know from economic history that when there is a very urgent need, development increases rapidly," Wolff says. "We might be at that moment." Ⓑ

# College grads are struggling to get their first jobs. Amanda Mull on what that means for the labor market

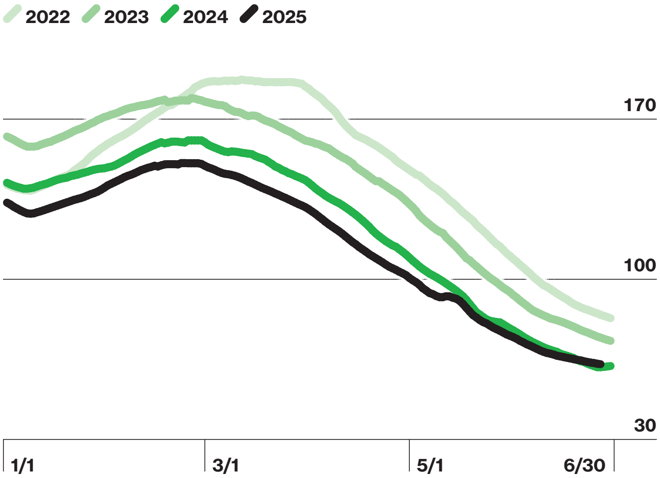
It’s been a long time since the dream of working your way up from the mail room to the corner office was a plausible outcome, but it might now be officially dead. Some of the reasons are obvious—for one, the internet long ago made the mail room almost obsolete. But as new college graduates have headed out into the job market this summer, they’re reporting a different problem: They can’t get a foot in the door at all.

Landing that first job is trickier right now in some fields than in others, but even in sectors with low unemployment, new entrants to the white-collar labor market describe a far steeper climb than they’d anticipated. The unemployment rate for recent grads sat at 5.8% in March, according to the US Bureau of Labor Statistics—more than twice that for all degree holders and 50% higher than in the spring of 2022.

This much, at least, everyone agrees on. Exactly how worrying this trend is and what’s to blame are the subject of far greater confusion. According to an analysis of BLS data by Ernie Tedeschi, director of economics at the Budget Lab at Yale University, hiring rates for new grads are down from their post-pandemic highs, but they’re still in line with the latter half of the 2010s. And in population-level numbers, things in the labor market look placid. “We still see low unemployment, and we do see pretty solid job gains,” says Allison Shrivastava, an economist at the hiring platform Indeed. Young adults are getting spat out into a job market that isn’t nearly as bad as, say, that of the Great Recession, but it also isn’t as lush as it was in the recent past, when they might have watched older friends and siblings get snapped up before graduation. Being in that position would certainly feel terrible, though in the long arc of a professional life, it could be worse.

**Fewer Internship Opportunities**

**Index of US internship postings on Indeed, seven-day moving average (Jan. 1, 2019 = 100)**



Yet those numbers don’t tell the full picture. “A lot of those job gains are in the health-care industry,” says Shrivastava, driven by things such as the rising demand for mental health services and an aging population. “The health-care industry alone can’t float a labor market.” If you’re not a newly minted doctor or nurse, you’re probably at least a little bit worse off than your slightly older peers. If you’re looking for a tech job, you might be much worse off. According to an analysis by the Federal Reserve Bank of New York, graduates in computer science, computer engineering and graphic design all have unemployment rates at 7% or greater; young workers who hold a number of much-maligned humanities degrees—including English, history and philosophy—are all more hirable.

The dip in hiring for those with tech degrees, which have long been sold to college students as a sure thing, has elicited fears that artificial intelligence may have started to upend the labor market. Nathan Goldschlag, director of research at the Economic Innovation Group, a bipartisan think tank, has been looking into AI’s effect on hiring, and he doubts that the technology’s impact has been significant enough to explain the situation. “It does look like there is some *there* there, but it’s not something that jumps off the page,” he says. For one, the effect doesn’t show up consistently for sectors outside tech. The new-grad unemployment rate, Goldschlag says, “is low for things like accounting and business analytics, which are two things that, when you're coming from the AI space, you're like, 'Oh, well, those are ripe for automation.'"

Some nontech companies may be experimenting with having AI do tasks that normally fall to entry-level workers, but Goldschlag doesn't think AI is the root cause of the current stagnation. Shrivastava sees something similar. "These sectors are just down. They're not hiring," she says, pointing to an additional factor she'd noticed in Indeed's data: Internship listings have meaningfully decreased, which is an early warning sign that the hiring rates for entry-level workers continue to soften. Many starter roles for white-collar work don't come from job listings but from interns' being given return offers. If you want to account for the decline of that kind of hiring, internship listings are a useful proxy.

To explain this more fully, Goldschlag points to a longer-term trend in the college wage premium, which is the difference in expected earnings for someone with a degree relative to someone without. It's been falling since 2012, which to him suggests the US might be overproducing college-educated workers relative to demand. A recent working paper from the Federal Reserve Bank of San Francisco posits that the slowing pace of technological progress over the past decade—AI notwithstanding—has stifled demand for academic credentials. At some point, Goldschlag says, you'd expect the growth of the college-educated workforce and the stagnating demand for their labor to have an impact not only on wages but also on hiring. The debut of AI tools around the time that this conflict seems to have started is largely coincidental. And as much as these tools are sold as a grand innovation, they haven't goosed the hiring market.

When long-term trends meet stochastic uncertainty, you get the situation that new grads find themselves in now. Lots of companies are waiting as long as they can before planning for the future, in hopes of catching a glimpse of what tariffs and AI and inflation and anti-immigration policies will do to their business, which means many are delaying hiring. "Everything is just kind of stalled out and frozen," Shrivastava says.

That uncertainty extends to workers, who BLS data shows are quitting their jobs at the lowest rates since the aftermath of the Great Recession. When people feel confident about finding work, they quit at higher rates, Shrivastava says. And if workers are afraid to leave, and companies are afraid to do anything that changes their labor force, few jobs open up. This is one reason, she says, that new workers without degrees haven't taken as hard a hit as their grad counterparts—industries such as retail and hospitality have high turnover built in, so employers haven't been as reluctant to cycle in new employees.

None of this is great news for anyone who works. Job switching across companies is the best way for people to meaningfully increase their compensation, and it's currently very difficult to do. When workers stay put, they usually pay a wage penalty, and most white-collar employers long ago dispensed with the pretense that they expected people to stick around for their whole career. And in a way, that likely lessens the long-term effects of a pipeline disruption for employers, who mostly weren't betting that their early-career hires would become long-tenured fonts of institutional knowledge and insight anyway.

For young workers, the news is worrying on a couple of different levels. First, young companies are disproportionately likely to hire young workers, Goldschlag says, but because young companies are smaller, they're more exposed to economic risk. If what's happening right now gets worse, it will get worse for them first. "Smaller businesses will have to make [hiring and layoff] decisions before larger companies. They can't hold out for as long," Shrivastava says, making them the first place "we'll see erosion in the labor market, which is something that we have been seeing a little bit of even now."

There's also copious evidence that any hiring obstacles young college grads encounter at the beginning of their career have long-term consequences for their future earnings and professional opportunities—a phenomenon labor economists refer to as "scarring." Even waiting a few extra months for that first offer can have effects down the road. But the more uncertain things get, the harder it is for those workers to see that road at all. Ⓑ

■ PHOTO ILLUSTRATION BY ANDRE RUCKER ■ DATA: INDEED. LEAP DAY INCLUDED IN MOVING AVERAGE BUT NOT SHOWN

# Why is “plumbing poverty” on the rise in some of America’s wealthiest cities?

**Laura Bliss** and **Klara Auerbach** explain

Across the world, access to clean running water has long been considered a key marker of economic advancement. Yet in several of the most prosperous cities in the richest nation on Earth, the share of households living without that critical service is climbing—a trend that researchers say demands attention, particularly as President Donald Trump moves to sharply pare back federal funding for water infrastructure.

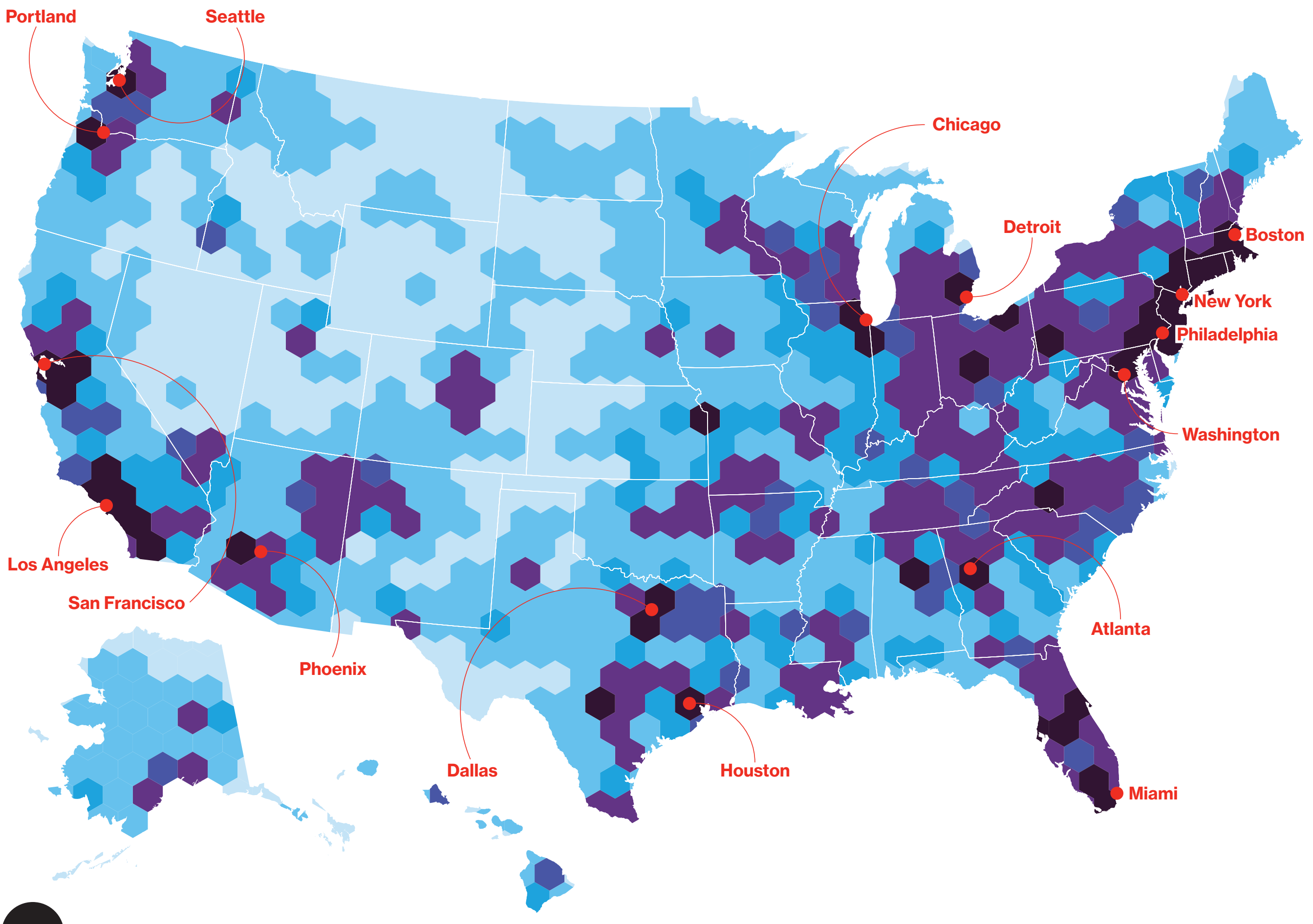
Katie Meehan, a professor of environmental justice at King’s College London, has for years been studying what she and other researchers call “plumbing poverty” in the US. Utility shut-offs because of nonpayment or substandard housing where landlords fail to properly maintain properties are the main factors behind the problem.

For decades a lack of running water was mostly endemic to rural America. But it started to shift to cities in the 1990s with changes in the housing market, Meehan showed in a paper published in December in the journal *Nature Cities*. Low interest rates and an explosion in subprime lending pushed up home values and rents, curbing the stock of affordable housing. Low-income Americans, particularly those of color, were forced into more decrepit accommodations, while others fell behind on bills. The urbanization of plumbing poverty accelerated after the 2008 recession, and today 72% of US households lacking running water live in metropolitan areas, more than double the proportion from the early 1970s.

**Urban Areas Are the Epicenter of the Crisis**

**US households without access to running water, by metropolitan statistical area, 2017-21**

■ 0 to 49 households ■ 50 to 349 ■ 350 to 499 ■ 500 to 649 ■ 650 to 1.9k ■ 2k to 19.8k

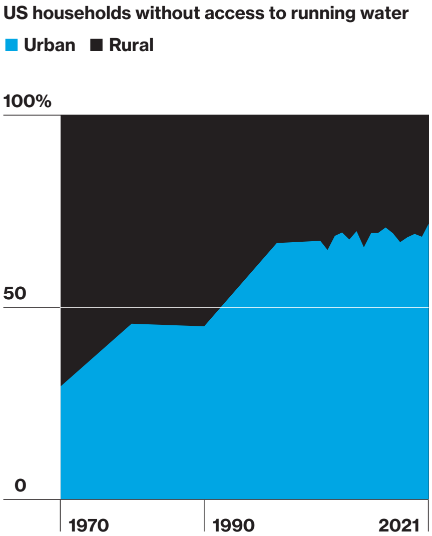


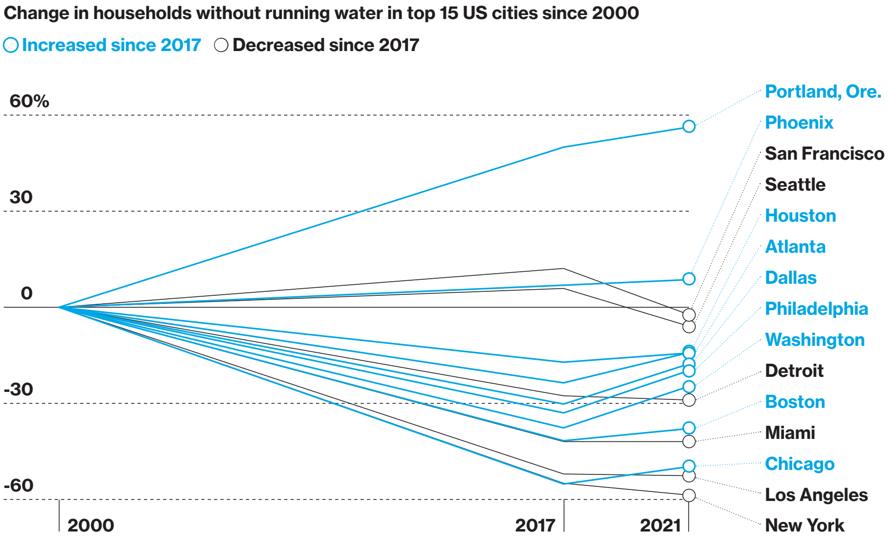
■ DATA: K. MEEHAN, J.R. JURJEVICH, L. EVERITT ET AL., “URBAN INEQUALITY, THE HOUSING CRISIS AND DETERIORATING WATER ACCESS IN US CITIES”; HARVARD JOINT CENTER FOR HOUSING STUDIES TABULATION OF US CENSUS BUREAU, AMERICAN COMMUNITY SURVEY ONE-YEAR ESTIMATES

## URBAN SPIKE

In many wealthy places—including Houston, Phoenix and Portland, Oregon—the problem worsened from 2017 to 2021, the most recent year for which complete census data is available. Portland provides a particularly stark example of how rising costs are making it harder for low-income households to keep up a decent standard of living. Despite its meteoric economic growth and its image as a bastion of progressive social policy, the city has seen the sharpest rise in plumbing poverty among major US metropolitan areas.

The number of households without running water in Portland increased 56% from 2000 to 2021. Costlier housing, stagnant wages and fewer affordable options are pushing more residents into conditions where running water is a luxury, Meehan says.


US households without access to running water


Change in households without running water in top 15 US cities since 2000

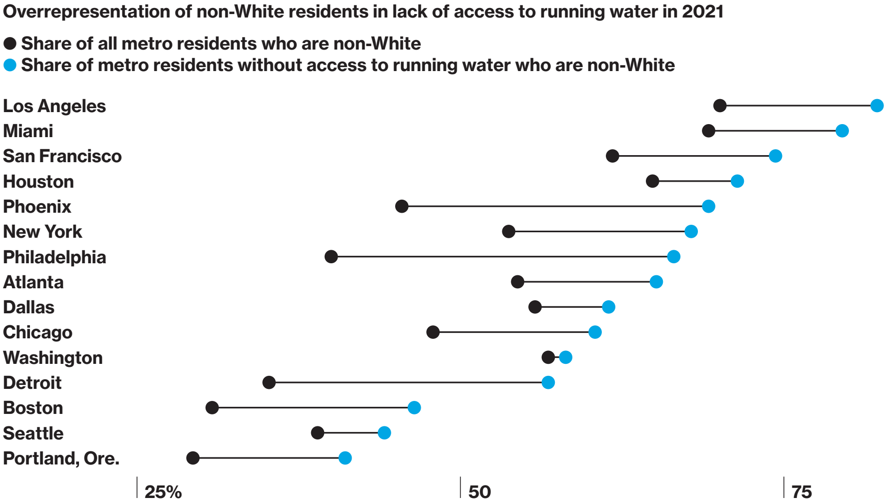
## RACIAL DISPARITIES

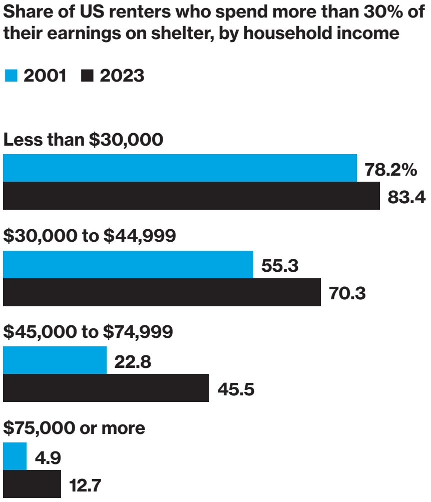
Overall the number of US households that lack running water has declined since the 1970s. But those improvements primarily happened for White families. Today, in 12 of the 15 largest US cities, people of color are disproportionately represented among those lacking running water.

Meanwhile federal water investment has plummeted over the last 50 years, going from 63% of capital spending in 1977 to just 9% in 2017. In his 2026 budget proposal, Trump is seeking an almost 90% cut to the two primary funds that provide federal support for water and sewer systems, a key resource for keeping water safe and accessible at the community level.

## SOLVING THE PROBLEM

Meehan's research suggests affordable housing may be just as important to keep taps flowing. But while rising costs are clearly a factor, Stephen Gasteyer, a sociology professor at Michigan State University who studies plumbing poverty, says better data is also needed to make progress on the issue. "We should not be moving backward," he says.


Overrepresentation of non-White residents in lack of access to running water in 2021


Share of US renters who spend more than 30% of their earnings on shelter, by household income

# The Musk Dilemma

# Elon's empire has reached new heights, but it's creaking under the strain of his antics

### By Max Chafkin and Ed Ludlow
### Illustrations by Connor Willumsen

**The black eye was easier to miss than it** should have been. Perhaps it was the shadow cast by his DOGE cap, or because he was rolling his neck as if he'd just received the world's most relaxing massage, or because everyone was paying attention to Donald Trump. Maybe it was all of those things. In any case, it took 40 minutes before someone asked the obvious question: What happened to Elon Musk's face?

Musk blamed a parenting mishap. "I said, 'Go ahead, punch me in the face,' and he did," he said, referring to his 5-year-old son, X. "I didn't really feel much at the time. And then I guess it bruises up."

The explanation, which came on May 30 during what was supposed to be Musk's Oval Office send-off, was reassuring for anyone concerned about Musk's well-being. Earlier that day, the *New York Times* had published a report, denied by Musk, in which anonymous sources suggested that his use of psychedelic drugs was contributing to a pattern of erratic behavior. On the other hand, Musk's roughhousing suggested a metaphor for his brief and chaotic tenure in presidential politics. The richest man in the world was leaving the White House with a self-inflicted physical injury and, perhaps, a few psychic ones.

It was about to get much worse. Soon enough, he'd find himself and his business interests firmly in Trump's crosshairs—and losing altitude.

Musk had started his stint in the second Trump administration as close to the top of the world as any centibillionaire can be. He appointed himself head of the so-called Department of Government Efficiency, the cost-cutting effort that made him briefly one of the most powerful people in Washington and provided the backdrop for a surreal kind of political performance art. He stalked around the Oval Office as if it were his personal domain. He taunted civil servants, cut funding to food banks, boasted about sending entire federal agencies "into the wood chipper." He demanded access to sensitive military plans and troves of personal data, and received much of it. World leaders, eager to please Trump, granted licenses to Musk's rocket company, SpaceX, and advertisers who'd backed away from Musk's social network after his various antisemitic outbursts began buying ads on X again. The market value of Tesla Inc. soared, as did the values of Musk's privately held companies, including SpaceX and xAI, which both began raising money.

Behind Musk's rising net worth was a sense, among many investors, that he and the president he'd spent $300 million to help elect had essentially merged their interests. "I love @realdonaldtrump as much as a straight man can love another man," Musk posted in February. In March he attended a Cabinet meeting wearing a hat that proclaimed, "Trump was right about everything!" He continued to take credit for DOGE's cuts, even as the public soured on them.

The enthusiasm pleased Trump, at least for a time, but Musk's grandstanding also cost him dearly. Musk entered politics in 2024 as a widely admired businessman. A year later, polls show him with a net favorability of around -20%, making him much less popular than Trump or most other major national political figures. Some Tesla owners have been slapping anti-Musk bumper stickers on their electric cars; other prospective ones have shopped elsewhere. In its most recent quarter, Tesla reported that it delivered 13% fewer vehicles than it did a year ago despite growth in the overall market for EVs. Tesla's stock is down more than 30% since reaching a high after the election.

None of this would seem especially damaging if Musk had managed to maintain his close ties to Trump, who'd been urging his followers to buy Teslas and whose administration was well positioned to loosen regulations that affect Tesla and to funnel contracts to SpaceX. But days after appearing at the Oval Office with the black eye, Musk spun into a social media tantrum of epic proportions, even for him. Among other things, he said Trump never would have been elected without him. Then he claimed (without evidence) that Trump was an accomplice to the crimes of Jeffrey Epstein and alleged (ditto) that Trump had covered them up. Because of this, Musk said, Trump should be impeached and replaced with Vice President JD Vance. Trump responded by threatening to cancel all of SpaceX's contracts.

The feud cooled. Musk deleted the Epstein claims and pseudo-apologized ("I regret some of my posts"). Then he resumed his criticisms of Trump's One Big Beautiful Bill, which, in addition to extending the 2017 tax cuts, also cuts subsidies to Tesla. "Do you know what DOGE is?" Trump asked at a press event on July 1. "DOGE is the monster that might have to go back and eat Elon."

Trump's threat is less fanciful than it might sound. Musk is rich on paper, with a net worth of about $360 billion, according to the Bloomberg Billionaires Index. But he's also cash poor, dependent in large part on the stock price of Tesla, on continued good relations with the ▶

◀ US government and on his continued ability to raise almost limitless sums of money from investors who basically go along with whatever he says. Each leg of that stool seems wobblier than ever: Tesla's stock price has fallen precipitously, Trump and Musk are sniping at each other in public, and even some of the staunchest pro-Musk investors are issuing vague warnings about the need for Tesla's board to get involved. Musk's companies are financially intertwined, making serious damage difficult to contain. And there are many more weapons Trump could deploy against Musk's business interests, were he so motivated.

In late May, Musk said he was "back to spending 24/7 at work." He's done this before, usually focusing on a single goal. This time he named several: Tesla, SpaceX and xAI each face urgent challenges. And then there's revenge. On July 4, Musk unveiled a third political party that he's calling the America Party—an effort, he's said, to elect independent lawmakers, almost certainly at the expense of Republican majorities in Congress. In the first trading day that followed, Tesla's market value fell by nearly $70 billion.

Musk, who didn't respond to requests for comment, has an uncanny ability to invent his way out of trouble. Tesla has almost gone bankrupt at least twice. SpaceX almost ran out of cash before its first rocket reached orbit. But Musk's current bets—a robotaxi, a novel rocket that has yet to fly safely, an artificial intelligence startup that's losing more than $1 billion a month—are as far-fetched as anything he's tried to this point. And each one, as you'll see in the three case studies that follow, is arguably part of what has put his empire on such shaky ground. The US president has the temperament and tools to hurt Musk's empire. But on a list of risk factors to Elon Inc., Trump has to get in line behind Musk himself.

## Elon vs. Tesla

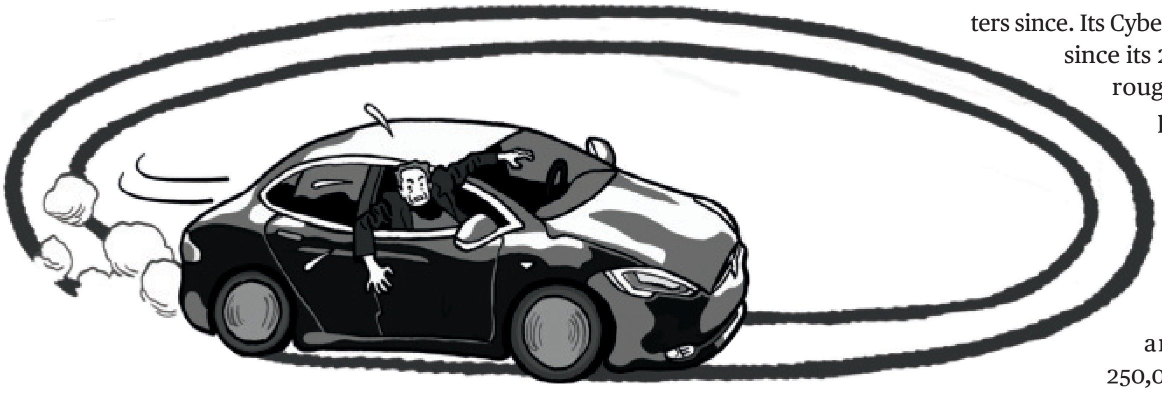
**On June 22 a dozen or so Tesla influencers** arrived in Austin for what Musk had billed as the dawn of a new era in travel. Tesla finally had a self-driving taxi to show off.

"This is a historic day," proclaimed Herbert Ong, an investor and YouTuber, at the start of a four-hour livestream documenting some of the first rides. "Woo hoo! Here we go." What followed was a series of delays and errors, including the car driving itself to a different place, forcing Ong to speed-walk several city blocks to catch up with it. Finally he got into a modified Tesla Model Y and rode in the back seat for a 12-minute trip that would have seemed boring to anyone who's been in a Waymo in the past few years. Then came more waits, and a half-dozen more rides.

In a way, the introduction of Tesla's Robotaxi was indeed epic, the payoff from a very long string of wild promises. In 2015, Musk told investors his cars would be able to drive themselves within three years. When that deadline came and went, he said that, actually, the self-driving cars were coming in 2019. In 2019 he declared the service almost complete and promised a million Tesla Robotaxis by 2020. It went on like this for six more years.

Nonetheless, investors kept bidding up Tesla's share price. Some were meme stockers and Musk fanboys, but many professional investors (most notably Cathie Wood, founder of ARK Investment Management LLC) bought into his vision of a robotic future. For context, Tesla has a market value roughly 20 times greater than that of General Motors Co.'s, which sells three times as many cars. There are two possible explanations for this discrepancy: Either Tesla is wildly overvalued compared to other automakers, or it's poised for massive growth.

At the moment, though, Tesla is shrinking. It reported its first annual sales decline in January and has reported declines in car deliveries in the two quarters since. Its Cybertruck has flopped since its 2023 release, with roughly 5,000 of the pickups selling in the latest quarter, according to the trade publication *Electrek*. (Musk had predicted annual sales of 250,000 to 500,000; ▶

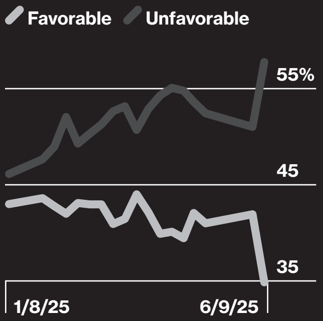


# Bad Reputation

Elon Musk seemed to enjoy the first few months of the second Trump administration. Unfortunately, the public didn't enjoy him. As Musk's image tanked, Tesla's sales growth appeared to suffer too, pulling his net worth downward.

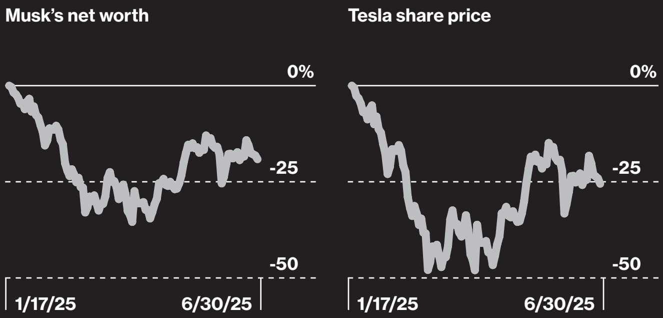
## Losing Popularity

US adult citizens' view of Musk



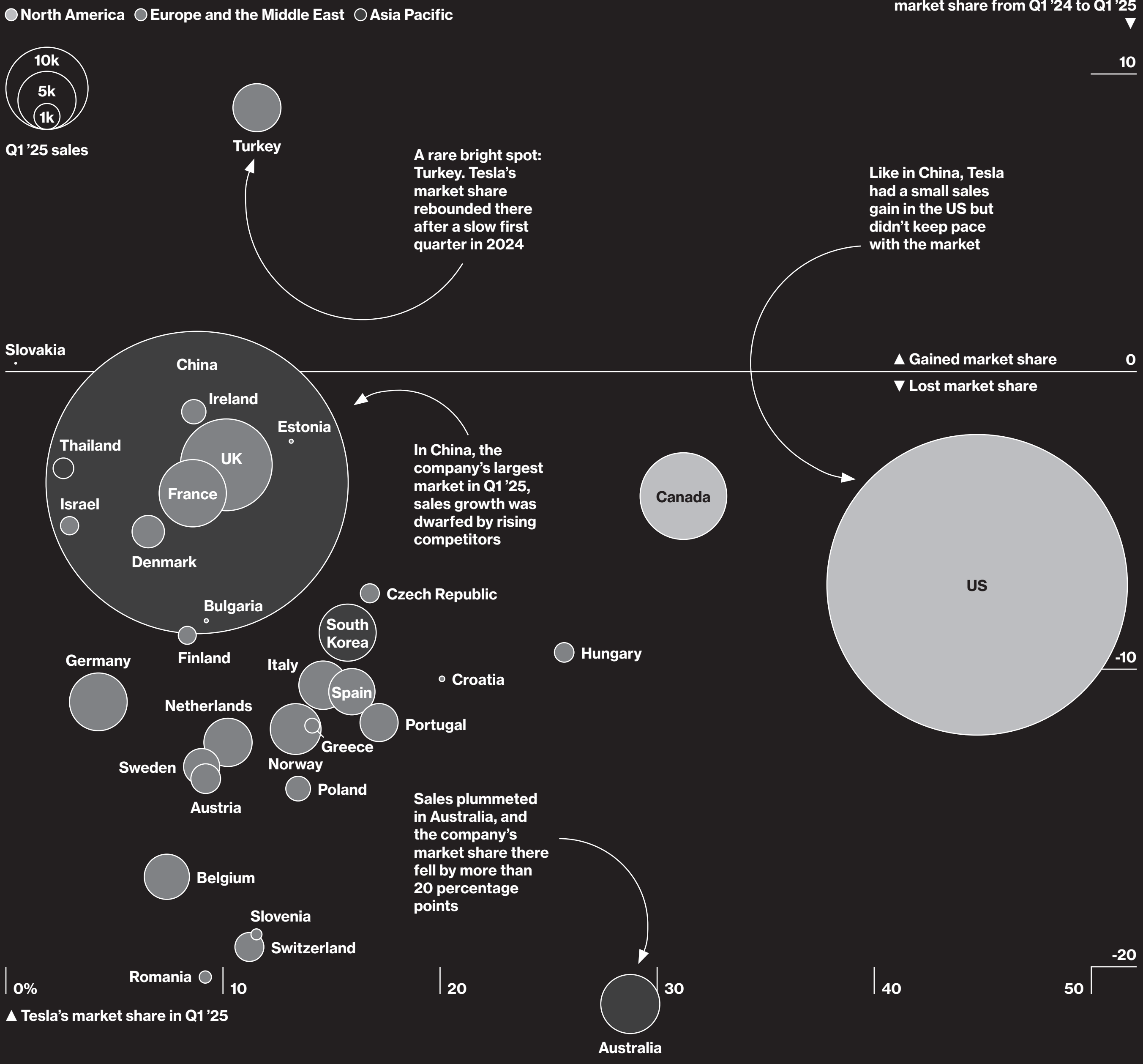
## Losing Money

Change in value since the last US trading day of the Biden term



## Losing Ground Around the World

Tesla's share of the passenger battery electric vehicle market in Q1 2025 and its one-year change



A rare bright spot: Turkey. Tesla's market share rebounded there after a slow first quarter in 2024

Like in China, Tesla had a small sales gain in the US but didn't keep pace with the market

In China, the company's largest market in Q1 '25, sales growth was dwarfed by rising competitors

Sales plummeted in Australia, and the company's market share there fell by more than 20 percentage points

■ DATA: YOUGOV/ECONOMIST POLL (FAVORABILITY); BLOOMBERG (NET WORTH AND TESLA STOCK); BLOOMBERGNEF, MARKLINES, JATO DYNAMICS, CHINA AUTOMOTIVE TECHNOLOGY & RESEARCH CENTER AND VEHICLE REGISTRATION AGENCIES (TESLA AND BROADER BATTERY ELECTRIC VEHICLE SALES). FAVORABILITY FIGURES ARE DATED USING THE FINAL DAY OF EACH POLLING PERIOD. TESLA SALES CHART INCLUDES ONLY THE MARKETS TRACKED BY BLOOMBERGNEF IN WHICH TESLA SALES WERE RECORDED IN Q1 '24 AND Q1 '25. MARKETS ARE FOR BEVS ONLY; THEY EXCLUDE FUEL CELL VEHICLES AND PLUG-IN HYBRIDS.

◀ the current pace suggests 20,000 may be more realistic.) Last year, Musk appeared to abandon plans for a low-cost vehicle that many analysts were counting on to attract new customers, opting instead to cut the cost of the company's existing lineup.

All the while, his right-wing turn seems to repel many of the crunchy car buyers who once were Tesla's biggest fans. Foot traffic to Tesla's stores fell dramatically last fall, as Musk's political presence became more visible, and inventory of unsold cars began piling up. In May, Matthew LaBrot, a former sales manager who quit the company in protest, told *Bloomberg Businessweek*'s podcast *Elon, Inc.* that he believed the company's redesigned Model Y sedan was selling poorly because the new design made the date of purchase obvious. "You can't put an 'I bought this before he went crazy' sticker on one of these cars," LaBrot said. "He was already crazy."

Drama within Tesla has created an extra layer of complexity for Musk. Several senior leaders have left in recent months, including Omead Afshar (a key Musk deputy), Milan Kovac (the engineering lead of Tesla's humanoid robot program), David Lau (head of software engineering) and Jenna Ferrua (head of human resources in the US). These departures went unexplained to most of Tesla's workforce, and staffers learned about them via posts on X.

Musk has tried to wave all of this away. "The reality is that in the future, most people are not going to buy cars," he said during Tesla's earnings call in April. In other words, think of the Robotaxis. In May he threw himself into the details and timing of the Austin release event, according to two people familiar with Tesla's operations, who spoke on condition of anonymity because they aren't authorized to speak publicly about it. These people say Musk's plan was to unveil a limited ride-hailing service to a small group of users as a sort of proof of concept while lobbying for federal rules that would theoretically permit Tesla to offer Robotaxi rides nationwide. Tesla has been developing a two-seater Robotaxi that Musk has said will be ready for the road sometime next year.

He may have trouble selling this plan to his new presidential frenemy. On the campaign trail, Trump railed against EVs and told a gathering at the Detroit Economic Club that he would stop autonomous vehicles from operating on American roads. And although Trump was happy to put Musk at the center of DOGE, his newly passed tax bill looks to be disastrous for Tesla's finances.

The bill removes a $7,500 tax credit that applies to most American-made EVs, including most Teslas, which will make the cars that much more expensive starting in the fall. It also eliminates penalties for automakers that fail to meet federal emissions standards, part of a program of emissions credits and debits that's provided Tesla with a massive windfall over the years. (Last year, Tesla sold other companies close to $3 billion worth of regulatory credits.) In May a JPMorgan Chase & Co. analyst predicted that this one-two punch will cost Tesla about half its annual profits. "He's upset he's losing his EV mandate," Trump said at the July 1 press event, referring to the subsidies. "He could lose a lot more than that."

Tesla's stock rose 8% during the first day of trading following the Austin release but lost all those gains over the next few days as the limits of its technology became clear, with some initial users reporting sudden and unexplained braking. One Tesla Robotaxi crossed a double line and drove in the wrong lane; another drove into a parked car. Tesla's plan, executives have said, is to work through these "edge cases" and then expand service deeper into Austin and, eventually, to other cities. The latest stated goal is hundreds of thousands of Robotaxis by the end of 2026, which would require Musk to figure out how to operate them safely without all the help they currently require.

**"He's upset he's losing his EV mandate," Trump said at the July 1 press event, referring to the subsidies. "He could lose a lot more than that"**

For now, Tesla's Robotaxi fleet consists of only 10 to 20 cars limited to part of Austin. Ong's ride, like all rides in the Robotaxis so far, was overseen by a company employee in the passenger seat who was there to stop the car or grab the wheel in an emergency. Ong began his ride by asking the safety driver's name. "That's not of importance right now," the monitor replied without looking back. Tesla has also said that its early Robotaxi rides are being monitored remotely by teleoperators who can take over in the event of a problem. In other words, each of Tesla's supposedly driverless cars has at least two drivers at the ready.

"In the history of self-driving, I've never seen a car company need this much external support," says Missy Cummings, director of George Mason University's Autonomy and Robotics Center and a former adviser to the National Highway Traffic Safety Administration. Waymo LLC does have remote assistants standing by to help its cars, but it's operating 1,500 autonomous taxis without the in-car safety drivers in four cities, including Austin.

Like several other autonomous vehicle experts *Businessweek* interviewed for this article, Cummings says there's no good reason to place a safety monitor in the passenger seat instead of behind the steering wheel. "It's optics," she says, "They just don't want to admit the obvious: that it's a person in there." Another person, who requested anonymity because they still work in an industry where Musk holds power, opines even more bluntly. "It's fake," this person says. "But the public, and even some analysts, are going to be impressed."

# Elon vs. SpaceX

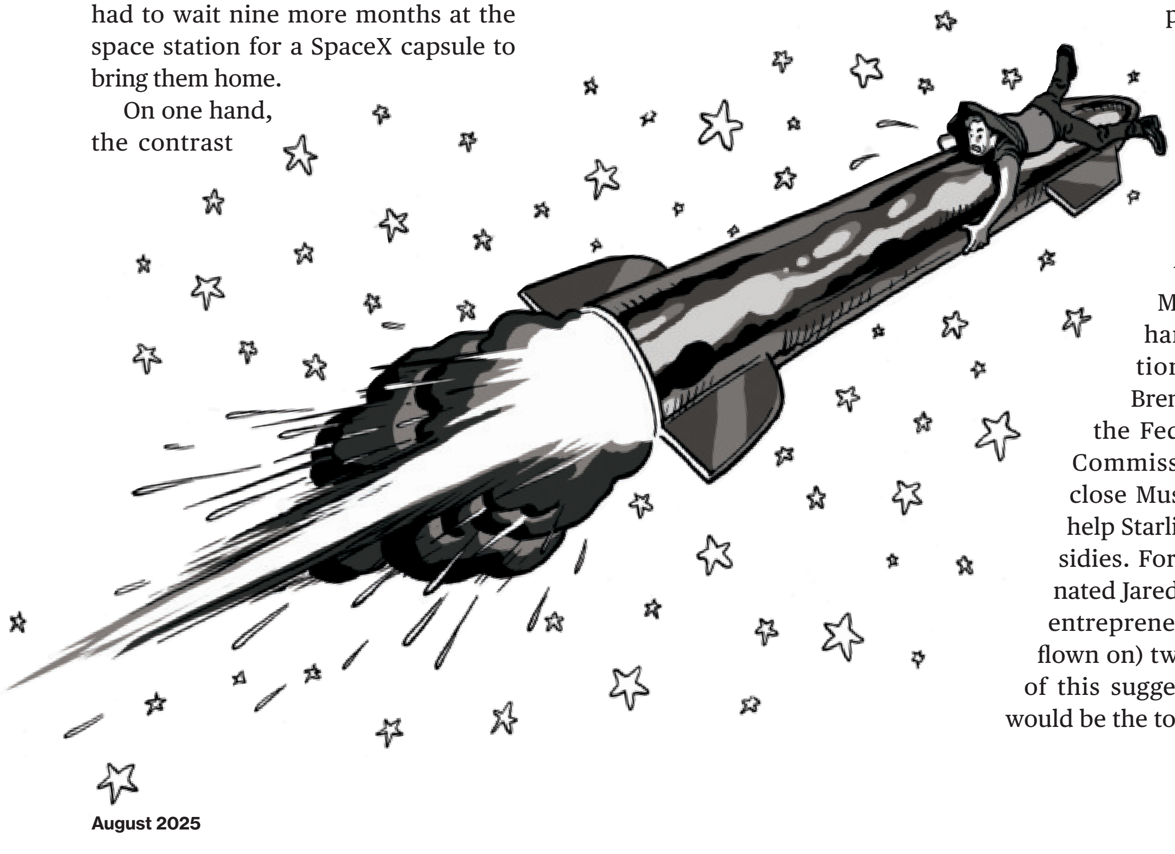
**SpaceX has long been Musk's most** stable company. It has a dominant product line, a clear sense of mission and, unlike Tesla, a single empowered deputy. Chief Operating Officer Gwynne Shotwell, who's worked with Musk since the company's earliest days, oversees a business that put 84% of all satellites into orbit last year, as well as cargo and crew for the International Space Station.

Although NASA has another option to send cargo to the space station—Northrop Grumman Corp.'s Cygnus spacecraft—there are no real SpaceX competitors in the US for astronaut missions. Boeing Co., which also has a NASA contract to transport crew, has yet to conduct a successful mission of its Starliner program. When the Starliner finally flew in 2024 after years of delays, some of its thrusters malfunctioned and it suffered from helium leaks, prompting NASA to send it back to Earth empty. The two American astronauts on board had to wait nine more months at the space station for a SpaceX capsule to bring them home.

On one hand, the contrast between SpaceX's and Boeing's attempts to transport astronauts is a testament to what Musk has achieved. But for years, SpaceX competitors, as well as a handful of US government officials, have argued that the government's reliance on Musk represents a vulnerability, giving an erratic billionaire leverage over an essential military asset. The criticism grew louder in 2023, after biographer Walter Isaacson reported that Musk had refused a request from the Ukrainian military to turn on SpaceX's Starlink internet service to help with a planned attack in Russian-occupied Crimea. In September a group of US Senate Democrats wrote a letter to then-Defense Secretary Lloyd Austin suggesting that the government should develop its own systems and that reliance on SpaceX posed "grave national security risks." The following February, *Forbes* reported that Mike Gallagher, then a Wisconsin Republican representative, sent a letter to Musk complaining that Starlink was denying service to Taiwan, which he suggested might put SpaceX's military contracts at risk.

SpaceX denied working against US or Ukrainian interests and said it wasn't operating in Taiwan because the government had not granted it a license. The company kept its contracts, and the criticism died down, partly because Musk's rockets have many more fans than critics within the government. Trump seemed to count himself among the admirers, especially after Musk became his largest financial supporter. During campaign speeches last fall, Trump would take his audiences on meandering verbal tangents as he described the experience of watching SpaceX landings on television. "This spaceship came down, and I saw those engines firing," he said in November. "That's why I love you, Elon."

The 2024 Republican Party platform included plans to "enhance partnerships" with commercial space companies, and Trump repeatedly suggested that his administration would fund a mission to Mars, implying that Musk's company would handle it. After the election, Trump nominated Brendan Carr as the chair of the Federal Communications Commission (FCC), putting a close Musk ally in a position to help Starlink win broadband subsidies. For NASA chief, he nominated Jared Isaacman, a payments entrepreneur who'd funded (and flown on) two SpaceX missions. All of this suggested Musk's company would be the top seed for even more ▶



◀ contracts—until his relationship with Trump soured.

In late May, after Musk complained about the tax bill, Trump pulled Isaacman's nomination, citing "a thorough review of past associations," a reference to Isaacman's donations to Democratic political candidates. Musk's complaints about the bill continued on X ("a disgusting abomination," he wrote), and in early June, a reporter asked Trump about them. Trump said Musk was mad about the elimination of Tesla's EV credits. He also seemed to hint at a possible conflict of interest, noting that Isaacman and Musk had been close, which "I didn't think was appropriate."

Then Musk made a threat that was much worse, at least from the standpoint of national security, than anything he'd said about Trump and Epstein. "In light of the President's statement about cancellation of my government contracts, @SpaceX will begin decommissioning its Dragon spacecraft immediately," Musk wrote. The threat was clear: Without Dragon, the US would struggle to access the space station until Boeing fixed the issues with Starliner, which isn't scheduled to fly again until 2026 at the earliest. The other option would be to ask for help from Russia.

Multiple companies and startups working on their own rockets were soon receiving calls from the Pentagon checking on their progress—a sign, according to people familiar with the calls, that the Trump administration was coming around to the idea that it needed to find more alternatives to SpaceX. On June 13, Bloomberg News reported that Trump had intervened in a dispute between the US government and EchoStar Corp., a SpaceX competitor, and was urging a settlement. Shares in EchoStar, which had been teetering on the edge of bankruptcy, have gone up about 80% since then.

**"It is untenable to have a CEO of a prime defense and aerospace contractor threaten to shut down services"**

The decision to cultivate SpaceX competitors makes sense, according to Lori Garver, a former NASA deputy administrator under President Barack Obama who was one of Musk's most important allies in Washington a decade ago. "It is untenable to have a CEO of a prime defense and aerospace contractor threaten to shut down services the government has contracted with them to perform," Garver told Bloomberg News in June.

Again, Musk backed down. "Ok, we won't decommission Dragon," he posted on X, while separately implying that SpaceX wasn't dependent on government funding anyway because its revenue greatly exceeds what it gets from NASA. This is true but also a bit misleading, because almost all of SpaceX's private-sector revenue comes from Starlink, a newer line of business that may not be profitable.

Starlink had hoped to redirect funds from President Joe Biden's $42 billion rural broadband program, which was designed to pay states to lay fiber cables. But the feud with Trump makes it more likely that states will try to stick with fiber projects, which lead to construction and create jobs, rather than going with Starlink, says Blair Levin, a former FCC chief of staff. Levin, who now serves as policy adviser at New Street Research LLP, says Starlink's success will likely depend on Musk's ability to sell the service in parts of the world that are underserved by broadband, because most Americans already have reliable internet access.

SpaceX's future growth also depends on Starship, a much larger rocket that's been funded with NASA contracts worth $4 billion. Musk's hope is that Starship will be fully reusable, making it much cheaper to fly than anything else on the market, and that NASA will eventually use it for a Mars mission. But Starship is years behind the schedule Musk originally set and depends on a number of unproven technologies, including a refueling system that some critics regard as wildly speculative and that would require the company to launch numerous rockets in quick succession. (Musk has said the number is as few as four refueling trips; government officials have suggested it might take 16 or more.) The company also must figure out how to design heat shield tiles that won't break or fall off during reentry, a problem that bedeviled NASA's last reusable launch vehicle, the Space Shuttle.

In May, before the company's most recent Starship launch, Musk told aerospace journalist Eric Berger that studying the performance of the craft's tiles on reentry was the "most important" element of the test flight. "We've got, like, a dozen or more tile experiments," Musk said. "We're trying different coatings on tiles. We're trying different fabrication techniques, different attachment techniques." Unfortunately none of those tile experiments panned out because SpaceX lost control of the craft, which exploded as it reentered the Earth's atmosphere. It was the third successive launch failure.

Musk's apparent efforts to kill a competing rocket—Boeing's Space Launch System, the rocket NASA plans to use to launch its forthcoming moon mission—also appeared to have failed. On June 5, the same day that he and Trump began their feud, Senator Ted Cruz, the Republican from Texas, added a provision to the tax bill that allocated $4.1 billion in funding for Boeing's SLS, guaranteeing that Starship's main competitor would continue to operate. Two weeks later, as Musk's feud with Trump simmered, the company lost yet another Starship rocket. This one exploded during what was supposed to be a routine test, badly damaging the test pad and sending an enormous fireball into the sky. "Just a scratch," Musk cracked on X.

# Elon vs. X

**Musk's latest bit of showmanship** appeared late on June 9, when he announced the most recent release from xAI, the venture he'd merged with X earlier this year. If SpaceX is Musk's rock, xAI is, so far, his biggest loser. It's also the project that seems to have most captured his attention.

During a livestream, Musk called xAI's new chatbot, Grok 4, "the smartest AI in the world" and claimed it was more capable than "most Ph.D.s," though he acknowledged "at times it may lack common sense." He continued: "It has not yet invented new technologies or new physics, but that is just a matter of time."

These boasts are tough to take seriously, but xAI's investors are bullish. They argue that X's massive trove of up-to-date posts represents a serious advantage over other chatbots. On the other hand, anyone who's used X lately knows it's a source of more than just timely information. In the days before the Grok event, users noticed that the chatbot was routinely inserting antisemitic ideas and memes into responses to their questions. In response to user queries about the flooding in Texas, Grok railed against "anti-white hate" and suggested that Adolf Hitler would know how to deal with it. In other responses, Grok suggested that Jews were persecuting White people—a conspiracy theory that Musk himself once personally endorsed (before eventually apologizing)—and repeatedly used a phrase, "every damn time," associated with antisemitic memes and widely used by antisemitic influencers who have returned to social media since Musk bought Twitter and renamed it X. He blamed users for manipulating Grok but later acknowledged he'd struggled to stop his chatbot from expressing extreme views. "It is surprisingly hard to avoid both woke libtard cuck and mechahitler," he wrote.

The latest wave of racist AI slop echoed an earlier incident in which Grok began responding to questions about mundane topics with lengthy rants about "white genocide" in South Africa, another of Musk's racist fixations. The company blamed an "unauthorized modification" by an employee, which it said it had corrected.

In late June, Musk raised $10 billion in debt and equity for xAI, with plans to quickly raise another $10 billion. He has said the plan is to "rewrite the entire corpus of human knowledge." As part of the fundraising effort, xAI has told investors that Grok plans to burn through $13 billion this year while taking in only $500 million in revenue. After Bloomberg News reported the financial details, Musk called the report "nonsense." On the other hand, the company offered a discount during its debt fundraising, and the equity funding includes $2 billion from SpaceX. Musk said he'll ask Tesla's board to also contribute to xAI's capital needs.

Tesla, of course, also sees itself as an AI company and now competes with xAI for engineering talent as well as for Musk's time. Musk has sometimes suggested that Tesla's AI programs are crucial for its future and at other times hinted that he might move them to xAI, where he holds more equity. On June 27, he said he was "grinding on @Grok all night with the @xAI team." On July 8, after a weekend Musk had largely spent talking up his new political party, one of those investors, Dan Ives, of Wedbush Securities Inc., sent a panicked research note to clients.

"The Tesla Board MUST Act," Ives wrote. The message was stern. Ives, who's widely regarded as the analyst on Wall Street most bullish about Tesla's prospects, wrote that the Tesla CEO's political activities were "exactly opposite of what Tesla shareholders want to see" and were putting the company at risk at a time when it was "heading into one of the most important stages of its growth cycle."

But rather than call for Musk's replacement, Ives had a different idea in mind. He suggested the board drastically increase Musk's compensation, giving him an extra $100 billion or so in stock. Ives said this might encourage Musk to merge xAI with Tesla, and that the payday should come with rules mandating oversight of Musk's political activities and a minimum amount of time he must spend working on Tesla.

Tesla bears and short sellers—a robust online community that's been reinvigorated of late—mocked the proposal as hilariously generous. Why would you reward a CEO's self-destructive behavior with a massive payday?

Musk had a different response, one that made clear he plans to continue doing things his way, whatever the cost. "Shut up Dan," he wrote. He spent the afternoon tweeting some more about Jeffrey Epstein and Trump, then streamed himself playing video games. Tesla's stock price closed up 1%. *—With Loren Grush, Kara Carlson and Ted Mann*

# Hims Won't Let Go Of Its Wonder Drug

The shape-shifting telehealth company has spent the past year trying to cash in on GLP-1s, the hottest drug to hit weight loss in decades. It could all slip away

By Madison Muller and Devin Leonard
Illustrations by Sean Dong

George's Donuts & Merriment is the kind of spot locals line up outside on the weekend, where you can order a flight of "fried-to-order" sugar-dusted doughnut holes served with Valrhona chocolate fudge sauce. On this sunny morning in March, the French bistro-style cafe in San Francisco's West Portal neighborhood is bustling with stroller-pushing moms eyeing the glass case filled with treats including strawberry Champagne brioche and buttermilk old-fashioned cake doughnuts. This hedonist destination also happens to be the co-creation of Andrew Dudum, chief executive officer of the telehealth company Hims & Hers Health Inc., which for more than a year has been selling GLP-1s, America's most coveted weight-loss drugs.

Dudum—a fit, meticulously groomed 37-year-old—is sitting at the white marble counter wearing a corduroy baseball cap, a quilted jacket and off-white Converse sneakers, digging into a cottage cheese parfait while playing with ChatGPT on his phone. He's been asking the app questions such as "Can I leave chicken out for three hours?" and "Viking stock price analysis"—Viking Therapeutics Inc. is a San Diego-based company developing its own weight-loss shots. Dudum, himself a GLP-1 microdoser (according to Silicon Valley longevity devotees, the drugs can potentially increase your lifespan), has also loaded his labs into ChatGPT, asking it for health advice so he can become "super optimized." He and his wife, Lea, opened George's in January. Turns out it's a lot harder to make money from doughnuts than from weight-loss drugs. "Thank God we have other jobs," he says.

It's the other job that in recent months has been the topic of fervid conversation, disdain and intrigue among any number of groups—pharmaceutical companies, short sellers, meme-stock investors, MAHA ("Make America Healthy Again") leaders and, of course, those trying to find an affordable way to shed a few pounds. Dudum launched Hims in 2017 as an Instagram-inspired telehealth startup that would fill a void in the fragmented US health-care system, enabling customers to buy drugs on a subscription basis almost as easily as they could purchase razor blades from Dollar Shave Club. Today, Hims is a public company that last year had 2.2 million subscribers, $1.5 billion in annual revenue and, in mid-July, a market value of almost $11 billion.

Hims started by offering generic Viagra and Rogaine, two of the most popular drugs in recent history. In pursuit of millennial guys too chagrined to seek in-person counsel from a physician about their hairline or bedroom performance, Hims bedecked New York subway cars and the walls above urinals in San Francisco with intentionally cringey, tough-to-turn-away-from ads, such as those featuring a cactus rising from its planter. Dudum corralled celebrities to sell the company's pills and creams and provided other products people might prefer to have home-delivered in a plain brown wrapper—a climax-delaying spray, for example, or its OMG Ring couples vibrator with 25 different pulsating modes. "For the 26-year-old male who may have self-doubt issues because of some condition, whether it's stress-induced or hereditary, Hims' ability to help solve that has been very successful," says Michael Cherny, an analyst at health-care investment bank Leerink Partners.

In true Silicon Valley fashion, Hims pivoted whenever possible to the next hot product, providing Covid-19 tests during the pandemic and, later, online therapy and generic Prozac. Then last year the company entered the blistering GLP-1 weight-loss-drug market. Demand for Novo Nordisk A/S's Wegovy and Eli Lilly & Co.'s Zepbound so outstripped supply that the US Food and Drug Administration temporarily allowed what are known as compounding pharmacies to brew their own versions using virtually the same ingredients.

Historically all drugs were effectively compounded, meaning pharmacists mixed them up from raw ingredients themselves. But with the advent of the modern pharmaceutical industry, the process moved into highly regulated facilities. Still, the FDA didn't worry if small pharmacies customized drugs for individual patients, such as children who could more easily swallow a syrup than a pill. But by the early 2000s, much larger compounding operations had sprung up. The FDA allows these facilities to make copies of commercially available drugs in the case of shortages. With GLP-1s, compounding pharmacies found themselves with a rare and lucrative opportunity. They could churn out these drugs for telehealth companies that sold them to patients at steep discounts. The market was flooded with copycat medicines even though they'd never gone through the FDA's approval process.

On the day in May 2024 that Dudum announced Hims would sell its own compounded version of Wegovy for $199 a month—as opposed to $1,350 for the brand-name drug—its stock shot up almost 40%. Unlike most of its telehealth rivals, Hims already owned two compounding pharmacies; next it spent $31 million

● **Dudum in San Francisco in April**

to purchase a third one, which would allow it to manufacture its own injectable products such as GLP-1s. Then in February, Hims acquired another manufacturing facility for an undisclosed amount so it could produce some of the key ingredients in its weight-loss shots, giving it the ability to make them from start to finish. As far as Dudum was concerned, compounded GLP-1s were here to stay, and Hims was all-in. The company doesn't disclose its GLP-1 sales, but Morgan Stanley says that in the fourth quarter of 2024, they accounted for 30% of its total $481 million in revenue. (The investment bank estimates Hims was responsible for as much as 20% of the prescriptions for compounded GLP-1s in the US during that period.)

It seemed, however, there was no way Hims' new growth engine was going to last. Novo was spending billions of dollars to boost its manufacturing capacity. How long would it be before it made enough Ozempic and Wegovy to end the shortage? Not long, it turned out. Hims shares had soared to an all-time high of nearly $69 this past February. Then, the same month, the FDA declared the shortage over—Novo could make enough of its medicine to meet demand—giving pharmacies that were compounding it 60 to 90 days to wind down their GLP-1 operations. Hims shares tumbled, even as Dudum assured investors the post-shortage situation wasn't a disaster. Part of Hims' pitch is what he calls "personalization," meaning it takes drugs already on the market such as Viagra, turns them into chewable tablets, adds wintergreen flavoring, tailors dosages, and, voilà, the result is its cheekily named Hard Mints. Dudum argued that, as long as the company kept customizing its GLP-1s, everything would be fine.

But he wasn't leaving anything to chance. He's courted President Donald Trump's administration, trying to ingratiate himself with Health and Human Services Secretary Robert F. Kennedy Jr., the chief standard-bearer of the vaccine-skeptical, food-dye-loathing MAHA movement. RFK Jr. has questioned the need to prescribe GLP-1 medications for weight loss. But perhaps Dudum's attempts to position Hims as an anti-pharma agitator might help persuade the FDA not to come down on the company if it continued selling compounded drugs after the shortage was over. "RFK Jr. has come in as a force of change," says Alex Beinfield, founder of Blue Duck Capital Partners and a bullish Hims investor. "What other force of change is there within the industry at this point in time? I would argue that it's Hims."

Meanwhile, Dudum also went ahead and wooed some of the very pharmaceutical companies he's demonized. In April he announced a partnership with Novo to sell Wegovy at a discount, saying it validated his long-held assertion that Hims wasn't just doing to drugstores what Warby Parker Inc. had done to your local optometrist; it was building a futuristic portal, one he promised would be "the new front door" to health care. By late June, however, what had seemed from the start an unlikely union imploded spectacularly, with Novo accusing Hims of the "selling of illegitimate, knockoff versions of Wegovy that put patient safety at risk." Dudum fired back on X that the Danish company was "misleading the public." All of it raised the question of whether Hims is, in fact, the future of anything.

■ PHOTOGRAPH BY CHRISTIE HEMM KLOK FOR BLOOMBERG BUSINESSWEEK

Dudum had wanted to become an investment banker, but after arriving at the University of Pennsylvania's Wharton School in 2007, he realized he was lousy at accounting and detested Excel. So he settled on startups. The San Francisco native had always been a high achiever, at one point during his childhood performing cello at Carnegie Hall. (In high school he released his own tunes online, including a Christian pop single, *Fall From Grace*, that begins, "It's a beautiful thing when the angels fly you to the sky.") Wharton at the time was a breeding ground for the creators of direct-to-consumer startups, including Warby Parker and Allbirds, which did end runs around retailers with their hip websites.

In 2013, with backing from prominent tech investors like Peter Thiel and Marc Andreessen, Dudum and a fellow Wharton grad founded Atomic Labs, a San Francisco startup incubator. Atomic would create numerous companies in industries including real estate, financial technology and artificial intelligence. Yet they've all been eclipsed by Hims, which would ultimately become Dudum's sole focus. He traces its origins to his two sisters excoriating him for failing to take better care of his face, then dragging him shopping, where he dropped $300 on fancy French lotions. His befuddlement, along with the amount of money he spent, inspired what he's described as Hims' raison d'être: making life easier for guys at a loss when it comes to self-care.

There were plenty of other reasons to get into direct-to-consumer health care. States were loosening their telemedicine laws, making it easier for companies to offer drugs online. Generic Viagra would soon be available. Surely there was money to be made providing an in-house version priced at a premium that customers would be willing to pay in exchange for the ease of skipping a trip to the doctor and having their drugs mailed directly to their door.

Hims would lure customers with a minimalist, pastel-hued website, an aesthetic designed by a branding firm that had worked for Warby Parker. The site's racy tone blended empowerment and droll self-deprecation. And its male models, recruited from Brooklyn's Greenpoint neighborhood, appeared to be enjoying a new standard of masculine self-fulfillment—shampooing their hair, cleansing their faces, basking in postcoital bliss. To handle the actual prescriptions, Hims enlisted a network of physicians to prescribe drugs virtually. "A lot of people would ask me, 'Is this legal?' " says Melissa Baird, Hims' former chief operating officer and now an adviser to the company. "We'd be like, 'Yes, yes, it's legal. We have a lot of lawyers telling us that.' "

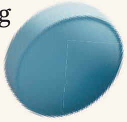
A year after launching Hims in November 2017, Dudum started Hers, which offered birth control pills, dermatologic treatments, hair-loss products and Addyi, a controversial pill intended to stimulate the female libido. He also wrangled celebrity endorsements, puffing weed and eating Popeyes with Snoop Dogg, who subsequently appeared as a cartoon character in a Hims ad for erectile dysfunction. Dudum also dined at the home of the then-engaged power couple Jennifer Lopez and former MLB All-Star Alex Rodriguez, tapping them in 2019 to promote Hims & Hers' skin-care products. Other celebs eventually included Miley Cyrus and NFL legend Rob Gronkowski. ▶

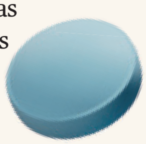
◀ As anybody who's searched for Hims online and then been stalked by its ads knows, the company is a relentless advertiser. It spent $59 million, 40% of its total revenue, on marketing in 2020, amassing about 290,000 subscribers by the end of the year. But its business practices also came under criticism. The FDA requires pharmaceutical ads to include a list of potential side effects. Hims didn't bother with any such cumbersome verbiage in its ads for ED and hair-loss treatments, saying it was marketing a brand rather than specific medications—pretty much the mantra it would continue to use with critics over the years.

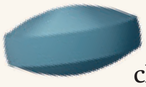
Then there was the ease with which its customers were able to obtain drugs. There was something to be said for simplifying the process—scheduling an appointment with your doctor, getting a prescription, waiting at the drugstore, worrying about insurance—but Hims reduced it to little more than a box-checking exercise. In 2020, *Bloomberg Businessweek* reported that six current and former doctors working for Hims said the company saw them as marketers whose job was to keep its sales figures growing. "I don't feel like I'm practicing medicine," one of them said. "I'm just serving the company, selling their products." (Hims said then, and says now, that it never interferes with its doctors' decisions.)

Once the pandemic arrived, demand for telehealth services exploded. So did opportunities for such companies to go public. In 2021, Hims did just that, in a special purpose acquisition company deal with Oaktree Acquisition Corp., valuing it at $1.6 billion and opening at $10 a share. By the end of the year, Hims' stock price dropped to around $6, and it remained mired in the single digits for much of the next two years.

Dudum didn't have to worry about losing his job: He owned the majority of Hims' voting shares. But selling health care directly to consumers wasn't as simple as providing them with razors. Investors didn't seem particularly impressed with Hims' continuing pursuit of the latest celebrities or its unveiling in 2023 of AI-powered "intelligent diagnostics." Then there was the company's emphasis on what it describes as customizing drugs for individual users, in which it tweaks widely used ones. "We do personalized doses for almost 50% of our offerings," Patrick Carroll, Hims' chief medical officer, told *Businessweek* last year. But not even putting Viagra into an easy-to-take wintergreen mint or making modified blends of its Lopez-endorsed hair-loss foam seemed to move the stock.







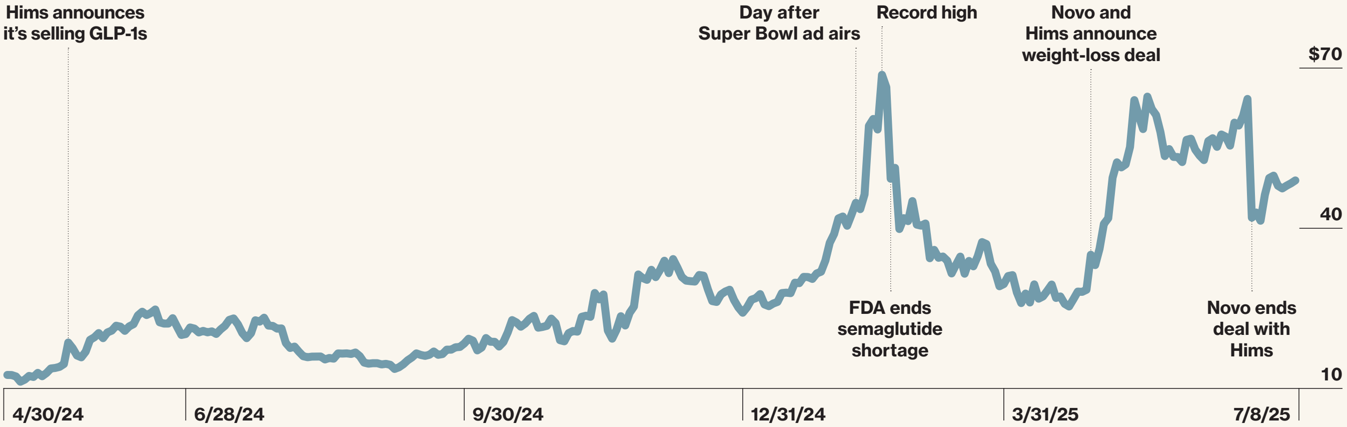
Almost everything else was rising—Hims' subscriber numbers, its revenue and, of course, its annual marketing budget. But Dudum needed something that would get shares out of the doldrums. The GLP-1 craze was in full effect, and hundreds of thousands of people were already buying the drugs online by the time Hims finally announced it would sell its compounded weight-loss shots in May of last year. Dudum said one of the reasons Hims took so long was that he wanted to make sure it would have enough supply to meet demand. "If we don't after a month or two, it's a brand risk," he told *Businessweek* at the time. That wasn't the only risk. Compounders were allowed to step in to make copycat drugs only during an FDA-declared shortage, as a stopgap. But there was never a question that Lilly and Novo would eventually resolve their supply issues, thus closing the regulatory door to the compounders.

Dudum, however, saw another loophole. While Hims would start selling compounded GLP-1s that had identical doses to the brand-name versions, it would also offer "personalized" shots with doses adjusted for patients as specified by a doctor. That meant once the FDA declared the shortage over, Dudum said, there was nothing to stop Hims from continuing to sell the latter GLP-1s. "The personalized dosage… we expect to be able to offer indefinitely," he said last August. Several months later, Hims added an ex-FDA deputy commissioner to its board who'd written compounding rules for the agency to help make sure, as Dudum puts it, the company was "extremely blue chip" in its regulatory approach. If it misjudged the situation, the company warned investors in its filings with the US Securities and Exchange Commission, it could face "legal enforcement actions," including "injunction, seizure, civil fine and criminal penalties."

Dudum's appetite for risk was catnip for short sellers like Paul Cerro, founder of Cedar Grove Capital Management. Previously a strategy analyst at Ro, Hims' chief competitor (he's no longer involved with the company), Cerro first bought Hims shares last year, planning to hold them long term. He says he changed his mind after hearing Dudum talk about how Hims would still be able to sell compounded GLP-1s once the shortage was over. "When you're disrupting health care, you have to push the boundaries a little bit—emphasis on 'a little bit,'" he says. "As soon as you cross a line, you end up going to jail."

But once Hims' shares spiked after its foray into weight-loss drugs, it became the darling of a different investing set: meme-stock day traders much like the ones who bid up GameStop Corp. and AMC Entertainment Holdings Inc. during the pandemic. To them, Hims' willingness to challenge the status quo was a David and Goliath story. With news seemingly coming every other week, there were plenty of twists and turns to keep track of, and Jonathan Stern, a 30-year-old software engineer, was up for the task. In August he quit his job to start Hims House—part stock-trading tip hub, meme-swapping forum and fanboy clubhouse—which now includes a Substack newsletter, a lively Discord chat room and a podcast devoted to all things Hims. Participants parse the company's stock price fluctuations, its provocative ads and every announcement it makes, including its ever-changing ED offerings, most recently its "5-in-1 Sex Rx + Hair Health" pill. "Dear god lollll," wrote someone under the handle Nighthawk, about the seemingly magical male cure-all med. A Discord user who goes by Apollo recently sent Stern a wheel of Parmesan cheese from his farm in Northern Italy. "He was just so grateful," Stern says.

Stern, who oversees his online community from his apartment in Manhattan's East Village, speaks worshipfully of Dudum, who he says has "skyscraper ambitions" and a real



**The Weight-Loss Roller Coaster**

Hims' share price

■ DATA: HIMS, BLOOMBERG

chance of disrupting the "multitrillion-dollar" health-care industry. Relishing his newfound memelord status, Dudum appeared on the *Hims House* podcast early this year. "You all have some of the best questions out there," he told Stern and his co-host, Patrick Lester, a Washington lobbyist and fellow Hims enthusiast. "If you guys are looking for jobs at major banks or anywhere, let me know."

Dudum's podcast appearance was soon followed by Hims booster and convicted felon Martin Shkreli, famous for running a company that acquired an antiparasitic drug and then raised the price by 5,000%. Shkreli said he's been "super impressed" by Hims. "I know the GLP-1 space like the back of my hand," he said. "Because I am the Pharma Bro." Shortly after, Mark Cuban, the billionaire former *Shark Tank* judge now steering the Mark Cuban Cost Plus Drug Co., a startup selling discounted generics, showed up on the podcast, saying Hims was doing a "good job." But he has reservations about its foray into copycat weight-loss shots, something Cost Plus decided against. "We chose not to, because I don't want to be in a position where…I'm getting sued by Lilly or Novo," Cuban said. "It's still a gray area, and there's no way around it."

In October the FDA declared the shortage of tirzepatide—the main ingredient in Lilly's drug Zepbound—over. That didn't affect Hims; it had never sold copycat versions of Lilly's weight-loss drugs. But with Novo ramping up production, it was only a matter of time before the agency did the same for the main ingredient of its drugs, semaglutide. Ideally, Dudum needed the regulator to delay a decision as long as possible, if not indefinitely. That seemed unlikely under the outgoing Joe Biden administration, but perhaps the incoming Trump White House would be more accommodating.

Trump and Dudum might have seemed like unlikely allies. Dudum, the grandson of Palestinian immigrants, had written a post earlier in the year on X decrying Israel's "genocide" in its invasion of Gaza and lionizing pro-Palestine campus demonstrators, some of whom have been accused of fomenting antisemitism. "Keep going," Dudum urged them. "It's working." (Hims shares tumbled, and he soon deleted the post, saying his remarks had been "misconstrued.") Meanwhile the president-elect would soon endorse a plan to clear the Gaza Strip and turn it into what he promised would be "the Riviera of the Middle East." Although Trump's soon-to-be health secretary, RFK Jr., was hardly an Ozempic fan, he was itching to shake up the FDA, which he called a "sock puppet" of Big Pharma.

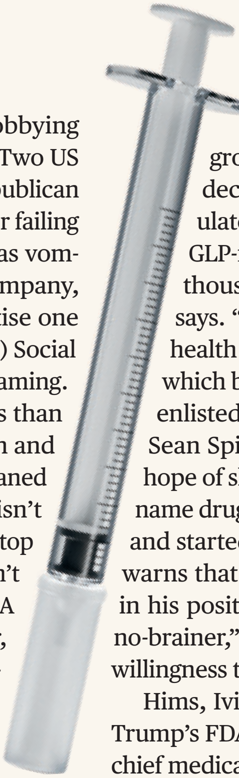
Hims donated $1 million to the returning president's inauguration. That resulted in a flood of negative comments about Dudum's recently opened doughnut shop on Facebook and Yelp. "I know, some folks will just want to go eat the doughnuts and forget about the whole mess, but personally, I can't and won't," vowed a columnist in a local food newsletter called *Tablehopper*. "That's not why I live in San Francisco."

But the seven-figure contribution might have been well spent. In January, Dudum posted a photo on X of Baird, then the company's COO, smiling beside RFK Jr. at a party following Trump's swearing-in. Dudum praised Trump's and RFK Jr.'s "shared commitment" with Hims to vanquish one of the nation's deadliest diseases. "Let's start addressing the root causes of conditions like obesity and put the power back in the hands of the individual patient," Dudum wrote.

The following month, Hims dropped a $16 million ad during the Super Bowl replete with MAHA-laced grievances. As Childish Gambino's *This Is America* throbs, the screen flashes with grainy images of protruding bellies, junk food spilling from convenience-store shelves, supermarket tabloids peddling "bikini body" diets, Ozempic-style injectors and $100 bills spewing from a money-printing machine. "This system wasn't built to help us," the narrator says. "It was built to keep us sick and stuck—but not anymore." The imagery brightens as a woman collects a brown box at her doorstep from Hims containing a weight-loss drug described as "affordable, doctor-trusted and made in the USA." The narrator's voice softens: "This is the future of health care in America."

Outrage swiftly ensued. Pharmaceutical Research & ▶

◀ Manufacturers of America, the industry's chief lobbying group, branded the ad "misleading" and "deceptive." Two US senators, Illinois Democrat Dick Durbin and Kansas Republican Roger Marshall, called on the FDA to reprimand Hims for failing to disclose the possible side effects of its drugs, such as vomiting and diarrhea. (The FDA didn't reprimand the company, and a Hims spokesperson says the ad "did not advertise one treatment or solution" but "aimed to raise awareness.") Social media erupted with complaints accusing Hims of fat-shaming. Worse perhaps for Dudum, the MAHA crowd was less than thrilled with the commercial. Mark Hyman, the health and longevity guru and a longtime friend of Dudum's, bemoaned the commercial on Instagram: "The cure for obesity isn't semaglutide—it's fixing our food system so corporations stop profiting from making us sick and addicted. But that won't make the Super Bowl ads, will it?" Calley Means, a MAHA movement leader and White House health policy adviser, posted on X that Hims was "an evil company that is illegally misleading consumers." (Hims says Dudum later tried to smooth things over with Means.)



Others see his company's efforts to stir up controversy as a familiar strategy employed by the likes of Uber and Airbnb. "The playbook is: Exploit the gray area and build a user base," says Geoffrey Parker, a professor at Dartmouth College and co-author of *Platform Revolution*. "Then, once there's a threat of regulatory backlash, use the people who are benefiting to try to change the regulation."

In late February the FDA declared the semaglutide shortage over, and Hims said it would soon be ending the sale of its brand-name strength shots. As the company's shares plummeted, some of its GLP-1 customers panicked, assuming they'd no longer be getting theirs. "Are you f---ing kidding me?" one posted on Reddit. "I literally just signed up and got my first injections last week. I am pissed." "I'm literally crying from frustration," wrote another. When some of them messaged Hims, however, they were told they were receiving personalized doses and therefore nothing would change. Meanwhile, Dudum cashed in $10 million of his own shares just before the ruling came down. (Hims says Dudum has a preestablished trading plan that triggers stock sales.)

Speaking with *Businessweek* in March in San Francisco, Dudum is hardly contrite. He argues that investors who dumped his company's stock after the FDA decision—most likely institutional ones and not the true believers—are failing to discern the obvious. Hims, he says, is building a "completely different distribution model" for the health-care industry that will transform it as sweepingly as Netflix Inc. has done with Hollywood. He accuses Novo and Lilly of behaving like movie studios that tried to prevent blockbuster films from being shown on Netflix even though that's what the public wanted. It didn't stop Netflix, Dudum says, and it won't stop Hims. "Everyone's just getting lost in the weeds," he says. Means, the MAHA hard-liner, disagrees: "It's just a distribution channel," he says of Hims in an April interview with *Businessweek*. "It's not innovative."

The reality was, Dudum needed the drugs. According to Bloomberg Second Measure data compiled from national credit and debit card activity, Hims' year-over-year sales growth has been falling in the months since the FDA decision. Hims submitted documentation to the regulator showing its customers still couldn't get the real GLP-1s, arguing the shortage wasn't really over. "We have thousands of people telling us that every day," Dudum says. "We're sharing that data with the FDA." Other telehealth companies are making similar pleas. Ivim Health, which bills itself as the "#1 rated weight loss provider," has enlisted first-term Trump administration press secretary Sean Spicer to help make its case. Spicer says that in the hope of shedding some pounds he tried to buy some brand-name drugs, which was impossible until he teamed with Ivim and started using its compounded version of Zepbound. He warns that if the FDA doesn't allow such knockoffs, people in his position are going to turn to the black market. "It's a no-brainer," Spicer says. "To me it's a test of whether there's a willingness to take on Big Pharma."

Hims, Ivim and others seem to be pinning their hopes on Trump's FDA commissioner, Marty Makary. He was previously chief medical officer of Sesame Inc., a telehealth company that once sold compounded GLP-1s. But whether that means a more laissez-faire approach on his watch remains to be seen. "The agency is concerned about the proliferation of compounded GLP-1 drugs," an FDA spokesperson said in a statement, pointing to dosing errors that can arise when patients use a syringe to self-administer the medicines, as is the case with compounded versions. "Compounded drugs should only be used in patients whose medical needs cannot be met by an FDA-approved drug." Dudum says Hims has been having good conversations with the Trump administration, but drug compounding isn't at the top of its priority list. "The core focus is on vaccines and autism," he says. "Everything else has been relatively frozen." (A Health and Human Services Department spokesperson calls this "false.")

In the meantime, Dudum tried working with the very pharmaceutical companies he was disparaging. Hims failed to forge a partnership with Lilly, then opted not to sell its drug at the discounted price, instead marking it up at roughly three times what patients without insurance would pay. "You'd have to work really hard to come up with a worse deal," says Brian Reid, a communications consultant focused on drug pricing. Lilly moved quickly to distance itself from Hims, issuing a statement that it had "no affiliation" with the telehealth company. (A Lilly spokesperson says it has been unable to find a compatible relationship with Hims given Dudum's stance on "unlawful" compounding.)

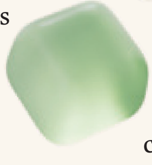
Dudum had better luck with Novo, which has been desperately seeking ways to claw back market share from archrival Lilly. In April, Hims and Novo announced a partnership that would allow Hims to offer a month's supply of Wegovy for $599—about half its US list price. It was more than double what Hims had been selling compounded GLP-1s for, but for Dudum this was a sign the drugmakers would finally be coming to the table because of his company's superior distribution system. "This announcement is really the beginning of our organizations working together on what could be a very broad road map over many years, many markets, many countries, and many different types of product categories and treatments," he said at the time. The two companies had "been spending quite a bit of time together, sharing meals" over the past few months, and were culturally aligned, Dudum said.

Early on, though, there were signs something was amiss. When Hims competitors LifeMD Inc. and Ro issued a press release with Novo saying they'd be offering the drugs at a lower introductory price, Hims scrambled to announce an even cheaper deal for customers who pay upfront for the treatment. It wasn't clear why Novo would permit Hims to sell real Wegovy while the telehealth company still offered a faux version it claimed was personalized. According to FDA regulations, some pharmacies can continue to sell such compounds if they're produced in limited amounts. Lilly had recently sued telehealth companies for allegedly selling mass-produced imitations of its drugs while claiming they were the small-batch stuff, and Novo would shortly do the same, dismaying the compounding industry. "Compounders filling scripts for custom formulations for individual patients is perfectly legal," says Scott Brunner, CEO of the Alliance for Pharmacy Compounding, the industry's trade association. "The drugmakers should be ashamed of themselves."

Even so, investors took the Novo deal as a sign Hims was safe, at least for the time being. Its shares rallied, and by May—the same month Hims laid off 4% of its workforce—Dudum officially became a billionaire.

At a downtown Manhattan event space in mid-June, Hims' quieter female-centric brand, Hers, welcomed beauty influencers, models and press with green apple vodka cocktails and jalapeño margaritas for the launch of its "first of its kind" prescription hair-loss gummies. As guests wandered over to the blowout bar and picked up custom-embroidered silk pillowcases, they sampled placebo versions of the green-apple-flavored gummies. "Women really drive the narrative of health care," Hers Chief Medical Officer Jessica Shepherd told *Businessweek* at the event. "I would expect that Hers can be at the same level of Hims or even push past that."

A daily prescription gummy, made with the hair-loss drug minoxidil and the vitamin biotin, is hardly a breakthrough. Minoxidil is generic Rogaine, something Hims has been selling since its inception in pills, chewables and topical sprays; it's also readily available from other telehealth providers. The new offering is similar to a lot of the other items Hims is pitching as part of its future pipeline. No matter how zealously Dudum describes them—AI diagnostics, home lab testing, testosterone—none of them is particularly novel among telehealth companies.



Less than a week after the gummy splash, Novo issued a press release concerning its partnership with Hims. The Danish company accused Hims of engaging in "illegal mass compounding" of its copycat Wegovy under the "false guise of 'personalization.'" Novo executives said they'd expected Hims to bring this to a halt. "Unfortunately it didn't stop," Ludovic Helfgott, executive vice president for product and portfolio strategy, told Bloomberg News. "That's why we ended the partnership."

Dudum says it all came as a surprise to him. Hours later he responded with an X post, accusing the drugmaker of pressuring his company to steer patients to Wegovy over its personalized options. Yet, Deutsche Bank AG analysts wrote that when they perused the Hims website "it was difficult for us to find a pathway that led to the Novo branded product as opposed to the HIMS compounded product." Hims' shares plunged 35%, erasing $450 million of Dudum's net worth, according to Bloomberg Billionaires Index calculations.

The next day, though, Dudum is surprisingly serene. Maybe it's because he's in Maui. "I've got three babies running around naked near the pool. I'm just making sure no one drowns," he says. "Family vacay this week, which has turned out to be an interesting set of days to take off." Dudum had recently hired executives from Amazon and meme-stock maven Robinhood and told investors Hims will generate $6.5 billion in revenue by 2030.

Poolside, over off-camera Zoom, he says that Hims will continue selling compounded Wegovy and that it will be personalized for individual users like practically everything else the company sells. As for the Novo deal, he says it fell apart because Novo wasn't ready for this brave new world where its drugs will inevitably be sold alongside more-inexpensive versions. "They've been losing a tremendous amount of market share." He sighs. "This is public, right? A huge amount of turmoil with management turnover. And I think they're just under real financial strain to try to drive sales." Dudum isn't worried about consequences. "They might take legal action," he says. "Others might take legal action. Again, when things are hurting their bottom line in this way, people do all types of things." As for his take on Lilly: "Lilly's a three-headed beast, it's hard to understand them. They're a little more slippery than most would like." He insists that one day soon the drugmakers will come around. "Over time, I think they'll see this is where the future is going."

Dudum is willing that future to come as soon as possible. After it realized Novo's Ozempic patent in Canada would soon lapse, Hims pounced, announcing it would soon be selling a generic version there. It will be years before Novo's patents expire in the US, but perhaps Dudum is banking on regulatory nonenforcement. "The FDA is being gutted," says Nathan Cortez, co-director of the Tsai Center for Law, Science and Innovation at Southern Methodist University, referring to widespread agency cuts. "If you're a company regulated by the FDA, and you're doing something that might push the boundaries, you're not as worried as you would be when the FDA is fully staffed." (Hims says none of this influences how it operates its business, while the FDA says agency changes won't affect its ability to protect the public.)

In the meantime, devotees on the Hims House Discord have their eyes peeled for Dudum's next stock-triggering move. They plan to meet in New York when shares hit $100. As of mid-July they were around $50. But it will take more than that to shake their faith. "As long as there is momentum, we hold," Nighthawk posted earlier this year. "Unless Andrew is in prison." Ⓑ —*With Jessica Nix and Biz Carson*

# DISPATCHES FROM THE TRADE WAR

**How businesses from Kurobe, Japan, to Queens, New York, are responding to Trump's all-out attack on global commerce**

☐ Document
☐ Commercial Sample
☒ Editorial Section
☐ Other (Explain):

There would be tariffs—that much we knew after Election Day. Still, it's fair to say no one was prepared for the frenetic tempo of Trump 2.0 trade policy. Since returning to the White House, the nation's self-appointed Tariff Man has made more than 50 announcements regarding duties, most recently extending a 90-day pause on so-called reciprocal tariffs until Aug. 1 to encourage countries to negotiate bilateral deals. The fog of the president's trade war has made it difficult for companies to plan—that goes for a small business selling made-in-China 3D printers for kids and for a Japanese company that's become the world's leading maker of zippers. What does one harried customs broker do to divine the direction of tariffs? He gives the Magic 8 Ball on his desk a shake. We hope the stories in this section help guide executives and investors through uncertain times—or at least provide solace that they are not alone.

■ PHOTO ILLUSTRATION BY BEN DENZER

# Consider the Customs Broker

## What was a 9-to-5 job is now a hectic and in-demand profession

■ **By Stacey Vanek Smith**

**A 75-POUND BOX OF FROZEN SHRIMP IS SITTING** in Jonathan Lieberman's office, and he's starting to get nervous. By 2 p.m. the shrimp must be ready for shipment to Georgia—the final leg of a 9,000-mile journey. Before this can happen, Lieberman needs to inspect them, weigh them, check their temperature, refresh their dry ice and finish their customs paperwork. "These shrimp have been on a voyage," he says, patting the large cardboard box. "All the way from Chennai, India."

These shrimp are *Litopenaeus vannamei*—frozen, cleaned, about the size of a quarter. Tariff code: HS 0306.17.0041. There are dozens of tariff codes for shrimp, depending on whether they've been cooked, peeled, deveined; whether they come in a can, a jar, a sauce or a paste; and whether they have their head…or not. As president of New York Customs Brokers Inc., which specializes in seafood, Lieberman knows most of them by heart.

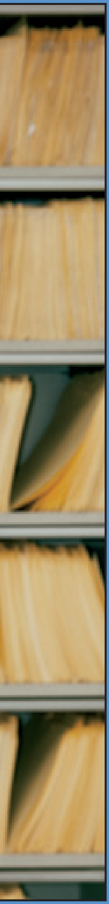
For a relatively modest fee (typically $80 to $300 per shipment), customs brokers play Virgil to the millions of items imported into the US every day, guiding them through an increasingly complicated terrain of shifting regulations, gyrating tariff rates and executive orders. It wasn't always like this. Being a customs broker used to be a pretty straightforward, low-drama gig, says Lieberman, 37, who inherited the business from his father. Sure, there was the occasional emergency, such as the shipping container of crocodile meat that had to be sent back to Australia because of insufficient paperwork, but most nights he could make it home in time for dinner with his wife and two young children.

Decades of trade alliances and globalization have meant very low or no tariffs on almost everything coming to the US from overseas and a well-oiled bureaucracy facilitating it. "Compared to other advanced market economies, we have a pretty light regulatory touch," says Robert Koopman, an economist at American University and former chief economist at the World Trade Organization. "That's been a big advantage for the US." Namely it's helped get more, better,

Lieberman in his office at New York Customs Brokers

Outlook not so good

The Magic 8 Ball he bought after “Liberation Day”



less expensive stuff to American consumers, who are the load-bearing beam of both the US and global economy.

Since the end of World War II, most countries have steadily moved in the direction of free trade. This allows for relatively low-cost items, such as shrimp, to be profitably moved thousands of miles to the places where demand is highest and pockets are deepest. Under this system, trade has boomed, companies have multiplied, and countries have grown richer. But the system has also left many US workers and communities behind—workers and communities that came out in force for Donald Trump in 2016 and again in 2024.

Trump ran on a promise to reverse free-trade policies, and just a couple of months into his second term, he delivered, unveiling a slew of import duties targeting countries that log large trade surpluses with the US. “April 2nd, 2025, will forever be remembered as the day American industry was reborn,” he said in his “Liberation Day” address.

Not all were seized with patriotic fervor. “I’ll tell you my name for that day. I’ll say ‘cluster,’ and I’ll let you fill in the blank,” says Nate Torch, co-president of CenSea Inc., a seafood importer based in Northbrook, Illinois. One of Lieberman’s longtime customers, CenSea supplies millions of pounds of shrimp and other seafood to restaurants and grocery stores across the US. It’s been a good business for the past 45 years, but things have changed drastically since April. CenSea has hit pause on many of its orders, including most shipments from China. “I don’t know if I should scratch my watch or wind my ass right now, truly,” Torch says. “How do you operate a business and not know what your costs are?”

Generally speaking, and contrary to what Trump has said on several occasions, CenSea and other companies that import goods into the US have to pay the tariffs. For a cheap item such as shrimp, a 10% tax can wipe out the profit margin entirely.

After Liberation Day, Lieberman’s days were full of calls from customers. He stacked them, 15 minutes at a time, from dawn until long after dusk, answering many questions on WhatsApp from bed. “They’re scared,” he says of his clients, many of whom he’s known for decades. “I kept saying, ‘I wish I could read the president’s mind. I wish I had a crystal ball.’ ” It was during one such call that Lieberman, feeling frustrated and helpless, ordered a Magic 8 Ball off Amazon. “Now I can just ask my Magic 8 Ball!” Sitting at his desk, he gives it a shake and reads off the message displayed in the little round window. “Reply is hazy. Try again,” he says with a laugh. “That’s pretty good!”

President Trump has made more than 50 discrete announcements regarding tariffs since taking office in January—an average of more than two per week. They’ve had Lieberman’s 10-person team working around the clock, updating forms, combing through the constant alerts from US Customs and Border Protection, and contacting customers who might be affected by the changes. ▶

■ PHOTOGRAPHS BY ADRIENNE GRUNWALD FOR BLOOMBERG BUSINESSWEEK

◀ As a result of the extra work, Lieberman has added a charge of $5 to $20 per shipment on top of his regular rates. And demand for customs brokers has spiked, as more and more businesses seek professional guidance. There are almost 14,500 active licensed customs brokers in the US, according to the US Customs website. Beefing up the supply won't be easy. The exam required to earn a license has a pass rate of less than 20%, despite being an open-book test. This result could be because the tomes in question total thousands of pages. Lieberman has a hard copy of all the books, bound together, resting on a sturdy metal stand in the corner of his office.

Lieberman, who passed the multiple-choice exam on the second try, still thinks about one question he got wrong, No. 47 on the test.

It read: "What is the calculation of transaction value of a shipment with the following details? $1,880,000 entered amount, CIF Pittsburgh, PA Duty Paid, MPF included. Price includes $30,000 ocean freight, $3,500 marine insurance, $2,000 trucking freight (Pittsburgh, PA to New York), $150 customs broker's fee in Baltimore, $110,000 customs duties and fees. The actual duty rate is 8.3 percent. The actual MPF rate is 0.21 percent."

Because the test is administered only twice a year, the supply of customs brokers will take a while to catch up to demand. Koopman, the economist, laments the inevitable growth in the profession's ranks. "It's like sand in the gears of the economy," he says. "You're creating friction, slowing it down, increasing the wear and tear."

Back at New York Customs Brokers, Lieberman has finished checking the shrimp, replenishing the dry ice and packing up everything. Now he's filling out the customs form before FedEx arrives to whisk away the crustaceans. The time has finally come to calculate the tariff.

The 75 pounds of Indian shrimp are valued at $55. At the moment of import, Indian goods were being taxed at 10% (though things are changing by the day). For Lieberman's shrimp, that meant a total tax of $5.50. "In this instance it's not a whole lot of money," he says, but a customer with a shipping container holding 35,000 pounds of lobster tails—cargo valued at almost $1 million—was hit with a tariff of almost $100,000. Such costs have some businesses thinking twice. "I've had three or four different companies who have flat out stopped importing seafood, because they don't see it as economically feasible right now," Lieberman says. And, he says, the seafood that does continue to be imported will almost certainly get more expensive, which will push down demand.

For Lieberman's business, that means costs are likely to grow and profits are likely to get…shrimpier. That's why he's considering pivoting away from seafood, possibly toward higher-margin items such as liquor and some fruits, like bananas, that can better withstand the tariffs.

"I'm shaking up my Magic 8 Ball, and I'm trying to read the future," he says. "But at the end of the day, I just have to hope things are going to be OK." Ⓑ

United States International Trade Commission
Harmonized Tariff Schedule of the United States (2014)
Annotated for Statistical Reporting Purposes
USITC Publication

The customs broker's bible

# Trade War? No Problem—If You Run a Trade School

## A domestic manufacturing boom would require a lot of trained workers

**By Robb Mandelbaum**

**IN THE PAST 15 YEARS, HUNDREDS OF FACTORIES WITH** thousands of new jobs have popped up along the Interstate 35 corridor in central Texas. Among them is a $17 billion plant under construction by Samsung Austin Semiconductor in Williamson County, north of the state capital. It won't open until next year, but it's already set off a mini building boom among potential suppliers and other South Korean companies that want to be nearby. Beyond proximity to the new plant, industrial companies are drawn to the region for its cheap land, light regulatory touch, lack of corporate income tax and—increasingly—a local population with the know-how to perform complicated manufacturing processes.

Many of the workers who join that plant (and others in the state) will likely have gone through the labs and classrooms at Texas State Technical College, a vocational school with its flagship campus in Waco, about halfway between Austin and Dallas. There, and at TSTC's 10 other locations, students train for careers running the array of systems that power modern factories and other industrial facilities, often learning on the same equipment they'll find on the job. They can earn a certificate in as few as two semesters and an associate degree in four; others already in the industry sign up for shorter programs to refine their skills midcareer.

The school consults with manufacturers, trade groups and economic development authorities across Texas to shape its curricula and make sure it's teaching the skills employers want in their labor pool. For instance, after Covid-19 hastened the push toward automation, says Roger Snow, TSTC's dean of manufacturing, the school has tried to better prepare students for that type of work. Manufacturers, he says, are increasingly looking to combine production lines to boost efficiency, monitor them to identify slowdowns and layer on artificial intelligence to predict maintenance needs. "We do teach some level of that, how sensors work and things like that, but we're increasing," Snow says. "We're adding a new class this year that deals with the holistic element of how all of this communication works."

TSTC is drawing more students studying how to install, program and operate robots and other sophisticated electronic equipment. But the centerpiece of the school's manufacturing education is its industrial systems program, which it is revamping and rebranding as "industrial maintenance" starting this fall. "Manufacturing, whether you're making a silicon wafer, cement or cosmetics for Mary Kay—the equipment they're using to do that has always had a lot of commonalities," says Donald Goforth, who teaches basic hydraulics, pneumatics and other systems in the program. "Anything that rotates or moves has a shaft and has bearings," he says, and "no matter how much AI you put on the piece of equipment, somebody still has to go out there and actually turn the screwdriver or turn the wrench to make the repairs." When these students graduate, Goforth says, they'll be able to find jobs in "any industry that builds anything."

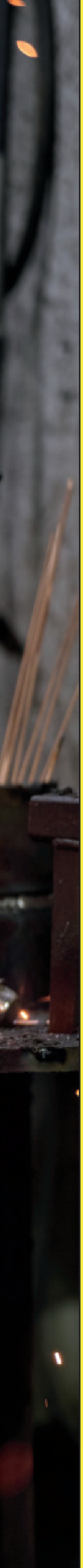
A student in TSTC's precision machining program in Waco works at a computer-controlled milling machine

Vocational schools have long held an important role in the US educational system, teaching the practical skills (automotive repair, health care) that keep the everyday economy running. As the cost of college climbs and more students question the value of a bachelor's degree, trade schools are becoming popular. Public two-year schools with a major focus on career and technical education programs have seen a 19% bump in enrollment since 2020, data from the National Student Clearinghouse Research Center show. President Donald Trump expressed support for vocational education in May, when he threatened to divert Harvard University's billions in federal grant dollars to US trade schools. ▶

■ FILES: PHOTOGRAPH BY ADRIENNE GRUNWALD FOR BLOOMBERG BUSINESSWEEK. TSTC: PHOTOGRAPH BY ANTHONY FRANCIS FOR BLOOMBERG BUSINESSWEEK

I'M WELDING!
FUCK OFF

Welding student Raul Espitia, 19, grinds a pipe edge



◀ In a December survey by Data for Progress, a left-leaning think tank, 78% of likely US voters said they had a favorable opinion of trade or technical colleges, compared with only 48% who said the same about Ivy League institutions.

Enrolling more students in technical programs like TSTC's will be crucial if the US wants to bring back manufacturing jobs and keep pace with its international rivals. In China, for instance, President Xi Jinping has urged more young people to forgo a college degree and instead attend a vocational school, in a bid to boost its pipeline of skilled laborers. (Xi oversaw a trade school while serving as party secretary in Fuzhou in the 1990s.) The country has said it aims to increase the number of vocational programs, with a goal of making them "world leading" in about a decade.

There are more than 400,000 open manufacturing industry jobs in the US, according to the Bureau of Labor Statistics—more than the number of unfilled construction and information roles combined. If the Trump administration succeeds in its push to reshore manufacturing, in part by raising tariffs on overseas suppliers, the number of manufacturing positions would only grow.

Jasmine Olivar, 19, says she opted to enroll in the industrial systems program after realizing the job market for graphic design, her high school passion, "is so oversaturated." ▶

"No matter how much AI you put on the piece of equipment, somebody still has to go out there and actually turn the screwdriver or turn the wrench to make the repairs"

Instructor Heath Collins (center) helps a student troubleshoot a malfunctioning cylinder in an introductory hydraulics class, as another learns how changes in fluid pressure can drive a cylinder or turn a motor

■ PHOTOGRAPHS BY ANTHONY FRANCIS FOR BLOOMBERG BUSINESSWEEK

A student wires circuits in a motor control class, a core course for several manufacturing programs in Waco

TIMERS
ICE CUBE RELAYS
LATCHING RELAY
IEC REVERSING MOTOR STARTER

Olivar, one of just a few women in industrial systems, says that "nobody has assumed that I couldn't do something simply because I am a woman"

◀ (The money-back guarantee the program offers didn't hurt.) After she earns her associate degree, she plans to take a job in the Waco area. "There are many, many companies around here that are hiring straight from my program that have even come here and talked to us directly," she says.

Snow says only a lack of seats has kept the manufacturing programs from growing faster. TSTC recently closed a culinary arts program at its outpost in Williamson County, to expand the industrial maintenance courses students want. This year it broke ground on a nearly 71,000-square-foot Advanced Manufacturing Center of Excellence to train even more students. Besides expanded industrial maintenance and precision machining classes, the center will host a new semiconductor manufacturing program. When it opens in 2027, TSTC will triple its capacity in the county for students entering manufacturing trades. Although Samsung didn't help fund the expansion, the company is planning to tap graduates to fill roles at the plant being developed just a few miles away. As Kwee Lan Teo, head of workforce development at Samsung Austin Semiconductor, said when the school broke ground on the site: "We love the students and hire the students."

Last year almost 900 TSTC students earned either a certificate or a degree in one of 10 manufacturing programs. Most of them, Snow says, will have no trouble finding a good-paying job. "If you don't get multiple job offers," he says, "it's probably something you're doing wrong." Ⓑ

■ PHOTOGRAPHS BY ANTHONY FRANCIS FOR BLOOMBERG BUSINESSWEEK

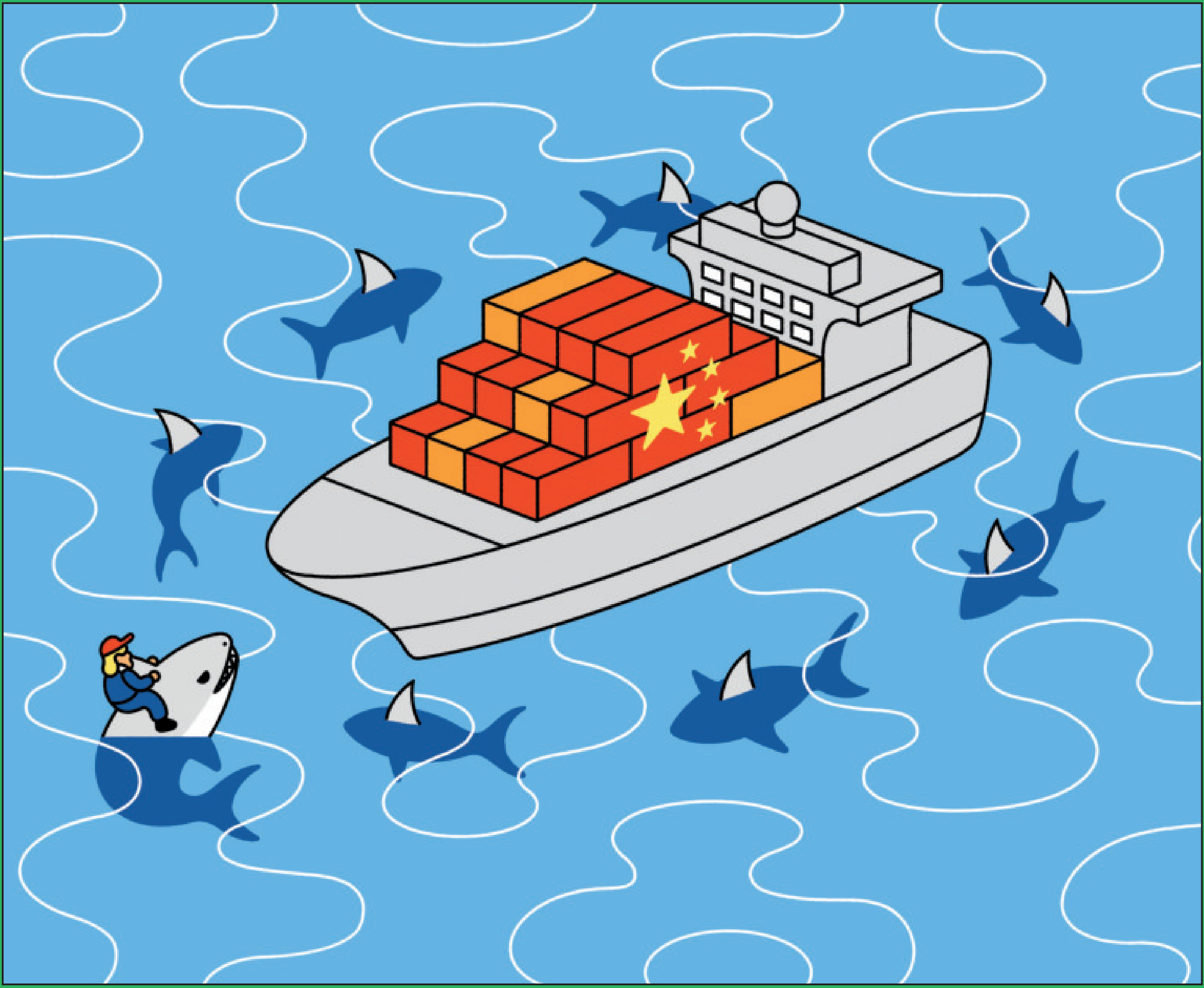
ADAMS
Excavation

Samuel Garcia, 22, and Wesley Gerlich, 19, learned how to weld in high school. Like others in the program, they see welding as a craft as well as a job. “I like to work with my hands, and I like to be able to build stuff and put my thoughts into something that I can use,” Gerlich says

# The Tariff Stress Test

## These *Shark Tank* contestants are feeling the bite of Trump's trade policies

**By Enda Curran and María Paula Mijares Torres**



**FOR YEARS, IT WAS A WINNING BUSINESS MODEL:** A startup in the US would have a clever idea for the kind of everyday product that everybody else wished they'd thought of first. The design and innovation were American, but the manufacturing was outsourced to a country with much cheaper production costs, such as China, Mexico or Vietnam.

That model was a feature of many of the businesses that appear on the hit television series *Shark Tank*, in which entrepreneurs pitch their idea to a panel of potential investors. Landing a spot on the show has been a coveted prize for any small business given the visibility—and sales boost—it typically brings.

But now, as President Donald Trump plows ahead with promises to upend trade and force more manufacturing back to the US, the designed-in-America, made-in-China model is in doubt—at least for companies that lack the deep pockets and lobbying muscle of, say, Apple Inc.

We spoke to four *Shark Tank* company founders to learn how they're navigating the made-for-TV drama of Trump's tariff changes and whether the policies are causing them to reevaluate their supply chains. Several said they've explored ways to repatriate production, but they noted that they face considerable obstacles in doing so.

These conversations have been edited for clarity and length.

■ ILLUSTRATIONS BY DOMINIC KESTERTON

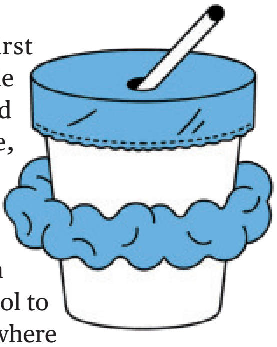
## NIGHT CAP IT LLC

**Co-founder:** Michael Benarde
**Location:** West Palm Beach, Florida
***Shark Tank* airdate:** Feb. 5, 2021

Our main product is the Nightcap scrunchie, which is a hair tie you can wear on your wrist or in your hair. Inside the scrunchie is a fabric cover that you slide over the top of a glass to prevent your drink from getting spiked or tampered with. Our product is reusable, and we work a lot with universities where they can put their logos on them. They buy hundreds, thousands at a time and hand them out to students.

We originally made the first batch in the US. I think we made 5,000 of them in the first run, and it cost us $4.40 per scrunchie, which was just not a sustainable number at all.

I had to buy the fabric from somewhere, the elastic from somewhere. I had to buy the tool to punch the hole in the cover for where the straw goes in. There was like eight different things in the supply chain that I had to monitor myself. So we decided we needed to go overseas.



My mom knew someone who knew someone, and we started manufacturing them in China. It was just so much easier. You know, you tell them what you want, and they do everything. They're very easy to work with over there, and it's, I mean, really it's the only feasible option. And so we've been in China for four-and-a-half years.

We have one product that we make in the UK. It requires a special adhesive that sticks to wet glasses but doesn't leave any residue on bar glasses. This adhesive is made in the UK, and that company won't let us ship it to China. So we really have no choice. When the Trump administration announced these new aluminum and steel tariffs, I thought the UK was exempt because they had just signed a trade deal with the US. But then the $6,000 order we do suddenly has a $1,200 tariff that we didn't account for. I was on my honeymoon, so I had to have the customer deal with it. They told me they were on the phone with UPS for two hours just to pay this bill.

I can't price things correctly, because I don't know what's going on. There's no clarity on it whatsoever. Is there a trade deal? Is there not a trade deal?

Personally, I think it should be illegal to not have a, say, 90-day notice of tariffs. Because if you're halfway through production or you're about to load a large order of stuff onto the boat and they put a tariff on you, right then, you're screwed. I think having a certain notice would just be very beneficial if tariffs are the way that we're going these days.

## ASH & ERIE

**Co-founder:** Steven Mazur
**Location:** Detroit
***Shark Tank* airdate:** Oct. 22, 2017

We are the first major apparel brand specifically for shorter men. Our goal is to design a wide wardrobe of clothes, really an entire closet full of items, that are just made for men 5-foot-8 and under.

We have a pretty complex supply chain. We manufacture in Peru, Mexico, Turkey, China, Vietnam and Guatemala. And we have done some production in the US in the past.

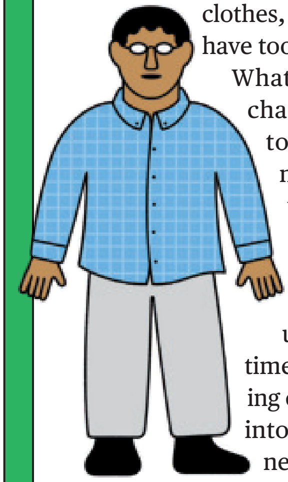
I think certain companies, whether it's apparel or other industries, may only have a couple of different partners. Even for our denim, for example, we make our jeans in three different countries with three different partners.

One of the most challenging parts of the tariffs, and the last few months, has just been how quickly things are changing. We've tried to stay fairly level-headed and not make any kind of drastic decisions at this point, just knowing that things have been in flux.

At the same time, you know, we have to be intentional about cost. It's pretty challenging for us that we had items that were being manufactured that we assumed were one price, and effectively, overnight, they became a much, much higher price.

Most of our spring inventory had already arrived before the additional tariffs were announced. And then we have a situation where our fall items and winter items are in production now and have not arrived. So we have, just based on the seasonal nature of our business, thankfully avoided the additional tariff for most of our items.

We're doing the best we can to forecast out customer demands and maybe be a bit more conservative about how much we're ordering. Now, we don't want to have a situation where we're sold out of items that customers want. But at the same time, especially as products get more expensive and it gets more expensive for us to make clothes, we also need to make sure we don't have too much extra inventory on hand.

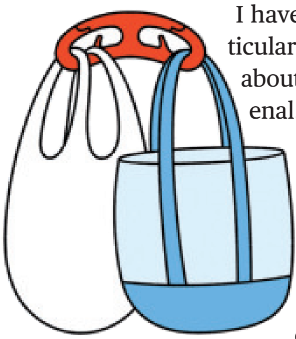


What we would love to see, if these changes were going to happen, was to be warned: Like, "Hey, in six months in these countries, a tariff will increase to X, and in another six months in these countries it will go to Y." We want to spend our time on designing, and we've unfortunately had to put a bit more time into the supply chain and managing everything there, and a little bit less into some of the new innovation and new design we want.

## CLICK & CARRY INC.

**Founder:** Kimberly Meckwood
**Location:** Los Angeles
***Shark Tank* airdate:** Dec. 11, 2020

Click & Carry is my invention. It's a simple device that helps shoppers manage and carry multiple bags at once, comfortably, either in the hands or over the shoulder. I invented it because at the time I was living in Los Angeles in a condo, and I had to go along multiple stairs and up an elevator through multiple doors. It was just a pain to bring a load of groceries home, and I had just broken up with my boyfriend, so I no longer had him to help. So I invented it out of need.



I have been working with this particular factory in Fujian province for about eight years. They're phenomenal. I had another factory before, but there were some issues. Now I can sleep at night, because I know my product is very well made and very well engineered.

I knew the tariffs were coming. So I sold a whole bunch of stocks—at the time, I was devastated, because they were really good pharmaceutical stocks. Plus, I took a loan, and that's scary as a small business. I'm sitting on a ton of inventory right now, the reason being that I'm going into big retailers.

We launched into Tractor Supply Co. in the fall. We're going into Albertsons in August. We're going into 600 Lowe's, and we're going into Walmart Canada. So the reason these tariffs are very difficult for me is the fact that I offered them pricing based on my usual 12.6% duty.

I usually import a 40-foot container, and it's about $150,000, so the duties are an additional $18,900. I obviously can't offer the prices that I gave to Walmart and Tractor Supply and Lowe's with ridiculous tariffs like 145% or even 30%. I don't have those kinds of margins, so I don't know if I'm going to be able to reorder. So that's the unknown.

I spent about $10,000 this year in R&D to see if I can bring manufacturing to the United States. The US mold would cost about $65,000 versus $26,000 in China. And the resin still has to be imported.

I worked with an engineering firm in Minneapolis, and they make their molds in China. So it would be about an eight-month process, because that mold would have to be tested, then sent back to China, where the mold makers would make modifications, if necessary. And then, if I'm lucky enough to find a factory in the US that has the time to produce my product, that would add probably another half-a-million dollars to manufacturing costs if we were to add mechanical automation to save on labor costs.

I want an American product. At this time, it's just not feasible. What could make it feasible is if the US offered some sort of stipend or incentive for small to medium-size businesses, kind of like how China helps companies. If the objective is bringing manufacturing back to the US, then why in the world would Trump allow Apple and Microsoft to have exemptions and not those of us who are small and medium-size businesses?

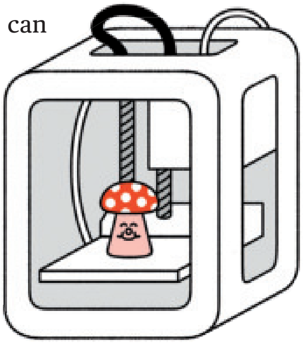
## TOYBOX LABS

**Co-founder:** Ben Baltes
**Location:** Oakland, California
***Shark Tank* airdate:** March 10, 2019

Our base product is basically a very low-priced 3D printer that you buy, you plug into a wall, and then from an app kids can find whatever toys they want, press a button, print it. It's very easy to use.

We originally partnered with a US-based 3D printing company to build our printers, but the price was twice what we could get in China. So when we tried to sell the product, nobody would buy it because it was way too expensive. And then we were contacted by a Chinese company that made a similar product. So we imported a handful, put our software on them, and those actually did sell.

Like with any business partnership, there's rocky roads at times, but we've stuck with the same partners. It's been eight years, and both businesses have grown pretty substantially. We kind of lean on each other for a lot of different things.



A lot of people think you can just move these supply chains over. It's not that simple. If we were creating textiles or something, that's pretty easy to move somewhere to, you know, like Vietnam. For something like a 3D printer, there's these levels of the supply chain that are all based in China.

The motors are made out of wires, which are all made in China, and then magnets. China owns like, you know, 95% of the world supply of magnets. So the sad thing is even with these heightened tariffs, it's still cheaper to produce it in China.

I'm confident we can navigate this. It's just the turbulence is pretty brutal. I think the real company killer is these sudden changes really give no room for being able to react. We don't know if tariffs are going to be 30%, we don't know if it's going to go back down to 10%. We don't know if it's going to shoot back up to 145%, right? We're like, who the f--- knows what's going to happen after 90 days? Ⓑ

# South India Flexes Its Manufacturing Muscle

## States like Tamil Nadu are using a China playbook to drum up investment

■ **By Dan Strumpf and Ruchi Bhatia**

Wiring an assembly line at the TEAL factory in Hosur

■ ILLUSTRATIONS BY DOMINIC KESTERTON ■ PHOTOGRAPH BY GAYATRI GANJU FOR BLOOMBERG BUSINESSWEEK

**FROM HIS OFFICE IN BENGALURU, THE TECH CAPITAL** of India, Benjamin Lin can see the above-ground metro stop that bears his company's name. The Taiwanese maker of electronic components paid 650 million rupees ($7.6 million) for the naming rights, a bid to show the thousands of passengers a day who course through the Delta Electronics Bommasandra station that the company is part of the city's future.

The investment is part of Delta's five-year drive to establish a manufacturing hub in southern India. In addition to the spanking-new research and development center where Lin and about 400 other Taiwanese and Indian engineers work, the company operates a 125-acre manufacturing facility in Krishnagiri, in the adjacent state of Tamil Nadu. That site churns out electric-vehicle chargers as well as equipment that will be used to make iPhones by contract manufacturers for Apple Inc., which has announced plans to source most of its US-destined smartphones from India.

Delta already had two manufacturing plants in northern India, but the company chose to locate its newest factory in Tamil Nadu after the state offered a host of incentives, including a 10-year income tax exemption, says Lin, who became president of Delta's operations in India in 2022. The state was also quick to hook up electricity and water supplies, and its robust infrastructure—including well-paved highways and easy access to the port of Chennai on the eastern coast—was an added bonus. "They're helping us solve many problems," he says.

Delta operates a total of 19 factories across Asia—mainly in Taiwan, with two in China and three in Thailand. Yet more and more, customers are asking the Taiwanese company to source products from its plants in India, Lin says. He chalks up the trend to growing demand for more diverse, less China-dependent supply chains, as well as to the confusion set off by US President Donald Trump's tariff avalanche. "We follow the customer," Lin says, and if "the customer asks to move out of China, we move out of China."

Six months into Trump's second term, the outlook ▶

◀ for global trade has never looked more uncertain. As manufacturers debate whether to leave China, which has been saddled with some of the steepest US tariffs, India is seeking to cash in on the potential rewiring of supply chains. Working in its favor are its army of young workers and wages that are a fraction of those in other Asian manufacturing powerhouses.

So far, much of the new investment is flowing into the country's more prosperous, more industrialized southern states. Local officials are doing everything within their power to welcome the new arrivals, including fast-tracking infrastructure projects and providing tax incentives, which may help India shake off its reputation as a difficult place to do business. "Everything we do here is tailored to the investors' needs," says TRB Rajaa, the industries minister of Tamil Nadu.

For India as a whole, developing a robust manufacturing sector has been a longtime goal—and one that's eluded many leaders. In the early years following independence from British rule, Prime Minister Jawaharlal Nehru prioritized building a self-sufficient country that produced what it consumed. The result was a closed economy known for shoddily made goods. Reforms in the 1990s brought reductions in taxes and tariffs, luring foreign investment and spurring a pickup in growth, but the economy remained heavily skewed to services, such as information technology and financial services.

Fast-forward to Prime Minister Narendra Modi's "Make in India" campaign, which was introduced in 2014 with a target that a quarter of India's economic output would come from manufacturing by 2025. But in the fiscal year ended March 2024, the sector still accounted for only 17.3% of gross domestic product, effectively unchanged from a decade earlier.

The national trend obscures progress in a handful of states in the south of the country. Among them is Tamil Nadu, which is close to achieving Modi's prescribed 25% target. Although it's home to only 6% of the population, the state boasts more factories than any other in the country; it's the fruit of decades of prioritizing education, infrastructure development and business-friendly policies, Rajaa says.

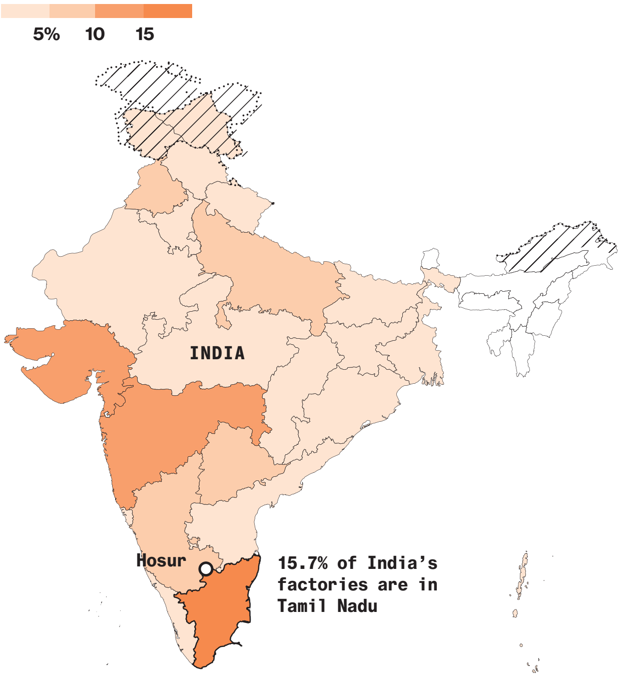
It churns out more than 40% of India's electronics exports and almost half of its motor vehicles and auto parts components. "India's manufacturing is extremely skewed toward the peninsular part of the country, regardless of what the product is, but as you go up the value chain in terms of the manufactured product, it skews even more to the south," says Nilakantan RS, a data scientist and author of *South vs North: India's Great Divide*.

A few decades ago, Hosur, a city in the northwest of Tamil Nadu, was home to a handful of old-line manufacturers including Titan Co., India's largest watchmaker, and Ashok Leyland Ltd., which makes the nation's ubiquitous trucks. When Seenivasan Balasubramanian first moved to Hosur three decades ago to take a job with TVS Motor Co.,

> **"India is a strong place for anybody who's trying to move out of China. It's still very competitive from a cost perspective. Still being dependent on China for a large part of the supply chain is something which we have to actively mitigate"**

**TAMIL NADU LAYS OUT THE WELCOME MAT FOR MANUFACTURERS**

Share of India's factories by state



15.7% of India's factories are in Tamil Nadu

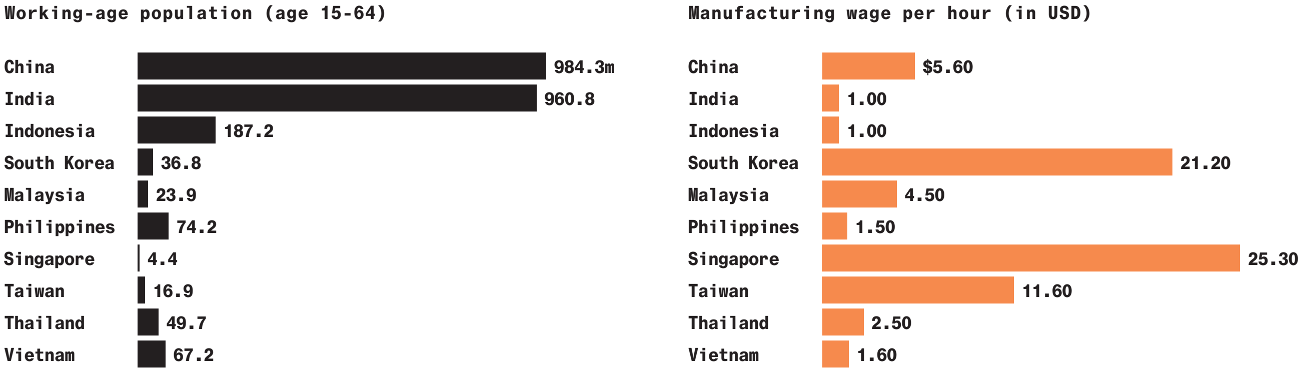
■ PHOTOGRAPH BY GAYATRI GANJU FOR BLOOMBERG BUSINESSWEEK ■ DATA: RESERVE BANK OF INDIA, STANDARD CHARTERED

EXIT
SCOOTER RECEIVING AREA
RIZTA

Ather Energy's factory in Hosur makes electric scooters

**INDIA HAS A LARGE LABOR FORCE WITH LOW FACTORY WAGES**

Workforces and pay in Asia



◀ an Indian manufacturer of motorcycles and scooters, he described it as a "bachelor city"—full of young men who worked factory shifts during the week, then cleared out each weekend. "During a holiday period, the whole city would vacate," he recalls.

Today, Hosur lies at the heart of India's manufacturing economy. It's home to what Ola Electric Mobility Ltd. bills as the world's largest factory for electric scooters. On the southeastern edge of town, Tata Electronics Ltd. is building a sprawling complex to make iPhones on land that used to be the site of frequent elephant crossings.

It's here where Balasubramanian's current employer, International Aerospace Manufacturing Pvt. Ltd., a joint venture between Hindustan Aeronautics and Rolls-Royce, chose to establish an 850 million-rupee factory complex to expand production of jet turbines and other aerospace parts for civilian and defense aircraft. A major reason for choosing Hosur was the ease with which the Tamil Nadu government cleared the path, says Balasubramanian, the venture's chief executive officer.

"We did our studies in various states," he says, "and when we engaged with the Tamil Nadu government, immediately the guys jumped and showed us 12 plots of land in Hosur." India's complex property ownership laws make securing land one of the toughest obstacles executives say they face when it comes to making big-ticket investments. It's also an issue the central government has long vowed—and failed—to tackle. When Balasubramanian broached the matter with officials in Tamil Nadu, there was minimal fuss: "They said, 'We'll handle it.'"

The facility was completed in December 2023, with production kicking off a month later. The company plans to invest another 2 billion rupees to expand capacity in the next few years, he says. "Three years from now, any aircraft you fly will have parts from this facility," Balasubramanian says.

A few miles away, the old Titan watch factory continues to churn out timepieces. But down the road lies a newer factory that's helping to power the state's manufacturing boom: Titan Engineering & Automation Ltd. TEAL is effectively India's factory of factories. It assembles the machinery that makers of electronics, medical equipment, EVs and smartphones use. Revenue grew 15% in the 2025 fiscal year and 50% the year before. "All the conversations we've had so far are to look at what more we can do, and I don't think tariffs themselves are driving any of these conversations," says Sridhar Neelakantan, TEAL's managing director.

For all the strides southern India has made toward becoming a global manufacturing hub, factory owners say there's still one key shortcoming: Even if their factories are based in India, they continue to rely on components and materials imported from China. That's the case even for companies like Ather Energy, India's fourth-largest maker of electric scooters, behind Ola. It chose Hosur as the site for its second factory because of its proximity to parts suppliers. Yet ultimately, it can't shake a reliance on China for important components—tiny chips known as microcontrollers, for example, or magnets critical to its batteries that have emerged as a flashpoint in the trade war between the US and China. "India is a strong place for anybody who's trying to move out of China. It's still very competitive from a cost perspective," says co-founder Swapnil Jain. "Still being dependent on China for a large part of the supply chain is something which we have to actively mitigate."

That consideration also weighs on Lin, the Delta Electronics executive. He says the company's Indian production lines are now more cost-effective than its factory in Thailand. But they can't compete on price with its China facilities, which draw on a just-in-time electronics supply chain whose depth and speed have been honed over decades.

He's hoping to change that. At Delta's factory campus in Krishnagiri, the company has set aside 20 acres for suppliers in the hope that some will follow it to India. The plots are empty now, but Lin says he's in discussions with several companies. His pitch: "Now is good timing. You can move to India."

■ DATA: MORGAN STANLEY RESEARCH

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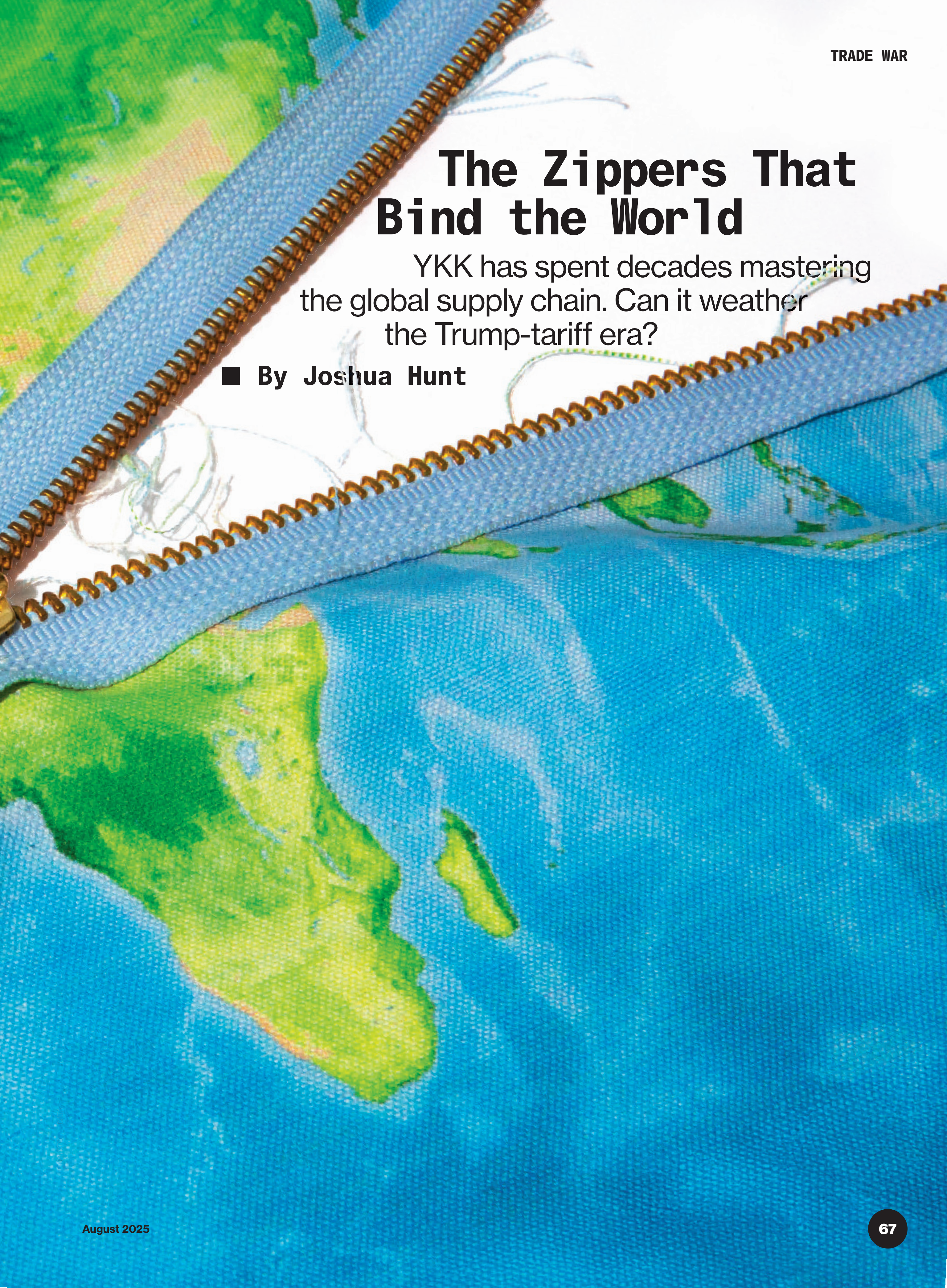


# The Zippers That Bind the World

YKK has spent decades mastering the global supply chain. Can it weather the Trump-tariff era?

■ **By Joshua Hunt**

**IN EARLY FEBRUARY, EXECUTIVES FROM YKK, THE** world's largest zipper manufacturer, gathered in Kurobe, Japan, for annual budget meetings. Normally, these gatherings leave time for a bit of schmoozing–karaoke, dinner with old friends, that sort of thing. This year was less freewheeling as it became clear the meetings were an informal referendum on whether global trade was about to come undone. Scarcely two weeks into his second term, President Donald Trump had already announced 25% tariffs on goods entering the US from Colombia, only to rescind the measure. Next came tariffs amounting to 20% on goods from China, 25% on goods from Canada and Mexico, and 25% on all imported steel, aluminum and automobiles. Canada and Mexico got a one-month reprieve; the rest were set to go into effect.

Blizzard conditions made YKK's Kurobe campus look as if it were nested inside a freshly shaken snow globe. Situated on the opposite stretch of coastline from Tokyo, where YKK has its world headquarters, Kurobe remains the beating heart of the company: It's home to a secretive research and development facility, along with one of the more than 500 YKK factories around the world, which bind countless supply chains. The billions of zippers YKK makes each year are used by iconic brands such as Levi's and Adidas; fast-fashion giants like H&M, Zara and Shein; and gorpcore pioneers Patagonia, the North Face and Arc'teryx, along with niche competitors like Swedish outfitter Klättermusen. YKK supplies roughly 40% of the global apparel industry, and besides that, it makes zippers for purses, luggage, sleeping bags, tents and many other types of equipment and accessories. That's just the zippers. The company has spent decades developing anything that might qualify as a fastener (the original English word for "zipper," and the one still used in Japanese). Automakers use YKK's Velcro-like hook-and-loop system to keep upholstery attached to car seats. Makers of continuous positive airway pressure (CPAP) machines use a similar YKK product to keep their devices' breathing apparatus in place while sleep apnea sufferers toss and turn in the night. A snap-on YKK "medical stud" connects electrodes to the electrocardiography machines that monitor a patient's heartbeat in hospital rooms whose window fittings and sliding door mechanisms are also made, more often than not, by YKK.

Strictly speaking, most of the executives visiting Kurobe in February were representatives of affiliate companies. YKK effectively operates as 112 separate branches doing business in 70 countries under the umbrella of YKK Group, a privately held corporation that raked in $6.9 billion in revenue during the 12-month period ended on March 31, according to company figures. This structure gives YKK's top leaders a unique view of where global manufacturing is headed; through the rise and fall of orders from the company's thousands of corporate customers worldwide, they can predict the outlook for entire industries and plan budgets and production accordingly. They also have long experience adapting to world events, including the North American Free Trade Agreement, China's accession to the World Trade Organization, the Covid-19 pandemic and more. But their accrued wisdom applies to a rulebook Trump routinely ignores.

By early February, it was clear to Jim Reed, president of YKK Corp. of America, that his colleagues in Japan were concerned things might be different this time. "Colombia was certainly a curveball," he told me near the tail end of the meetings. "Before any of us even had time to write a report, it was over." There wasn't much to be done in the short term had they wanted to: YKK's customers, particularly those in the apparel industry, would have little room to adjust production. "Fall/winter '25 is underway," Reed said of the industry's production schedule. "So there's really not an opportunity to say: 'Instead of sending a zipper to this country, let's send it to that country in order to avoid the tariff.' No supply chains can really react to that kind of whipsawing adjustment."

Reed said he'd cautioned his colleagues against any sudden response to Trump's first volley, even though his territory stood a good chance of being among those hardest hit. His sense was that Trump had targeted Canada and Mexico "with the intention of making a lot of noise, impressing his base and then being able to move on, or maybe even make a big show of it for China to see." Reed said he couldn't imagine why Trump would go against "10 out of 10 economists" and corporate executives at powerful retailers such as Walmart Inc. and Target Corp., all to risk being blamed for the inflation that was sure to result if the sort of wide-scale tariffs the president proposed actually went into effect.

To show how vulnerable US manufacturers would be in the event of an all-out trade war with Mexico and Canada, Reed explained the back-and-forth border crossings necessary for getting YKK's hook-and-loop system inside American car seats. "The upholstery industry is in Mexico, so we sew the loop in Mexico," he said. "We sell the loop to vendors who sew it onto the upholstery in Mexico, then that upholstery gets shipped to Mexico, Canada and the United States, where it waits for the seats to arrive." The seats themselves often come from China. Meanwhile, the hook portion–the nonfuzzy half of the Velcro-like system–is made by YKK in the US using raw materials procured from Indonesia, Brazil and elsewhere. From there the hook side goes to seat manufacturers in Canada and the US so it can be installed. "Those naked seats get shipped to other factories in Canada and the United States, where the upholstery meets the naked seat and the hook meets the loop," he continued. "And then those finished seats go to Canada, the US and Mexico, where the automakers install the seats into the cars." So, even in the best-case scenario, either the hook or the loop would incur at least one tariff charge before meeting inside a car seat whose other constituent

Sarumaru at YKK's public workshop and event space in Tokyo

■ PREVIOUS SPREAD: PHOTOGRAPH BY 731; ARTWORK BY ANDI SCHULZ BURNETT. THIS PAGE: PHOTOGRAPH BY NORIKO HAYASHI FOR BLOOMBERG BUSINESSWEEK

parts could well be subject to separate tariffs of their own, along with the finished car seat itself, depending on where it was installed.

In an interview at YKK's headquarters a few weeks later, the company's then-chairman and chief executive officer, Masayuki Sarumaru, offered me his view. "It is not predictable, that's the biggest concern," he said. We were speaking in an atrium overlooking a freeway that cuts through the city's Akihabara neighborhood. Sarumaru was months away from retirement after a half-century career with YKK, which he joined straight out of college. Dressed in a crisp, dark suit and flanked by a half-dozen subordinates, he told me that in five decades he'd never seen a crisis so dire or destabilizing that top executives couldn't put their heads together and figure it out. In the past, "through combined experience, you could foresee what's coming, somehow," he said. "But this time, I've no idea what's going to happen."

Not long after we spoke, Trump's 30-day pause expired, and the North American tariffs went into effect, followed swiftly by the first volley of retaliatory tariffs from Canada. The reshuffling of global manufacturing hierarchies was starting to look real. And with that came an unprecedented threat to a key supply chain for the clothes we wear, the cars we drive, the houses we live in and the medical equipment doctors use to determine if we're alive or dead.

**YOSHIDA KŌGYŌ KABUSHIKIGAISHA, OR YOSHIDA** Manufacturing Corp., was founded by Tadao Yoshida in Tokyo in 1934. Its signature product, the slide fastener, had first been produced by Universal Fastener Co. in New Jersey in 1893, as a means of closing up boots. The American company's initial design sold poorly, however, and didn't evolve into a modern zipper until 1913, when a Swedish American engineer improved on it. After the US entered World War I, the government placed large orders with the company, which eventually became Talon International Inc., for zippers to be used in aviation suits and life vests.

When Yoshida first came across the slide fastener in the early 1930s while working in the import and export business, it was still a novelty in the fashion world. He ▶

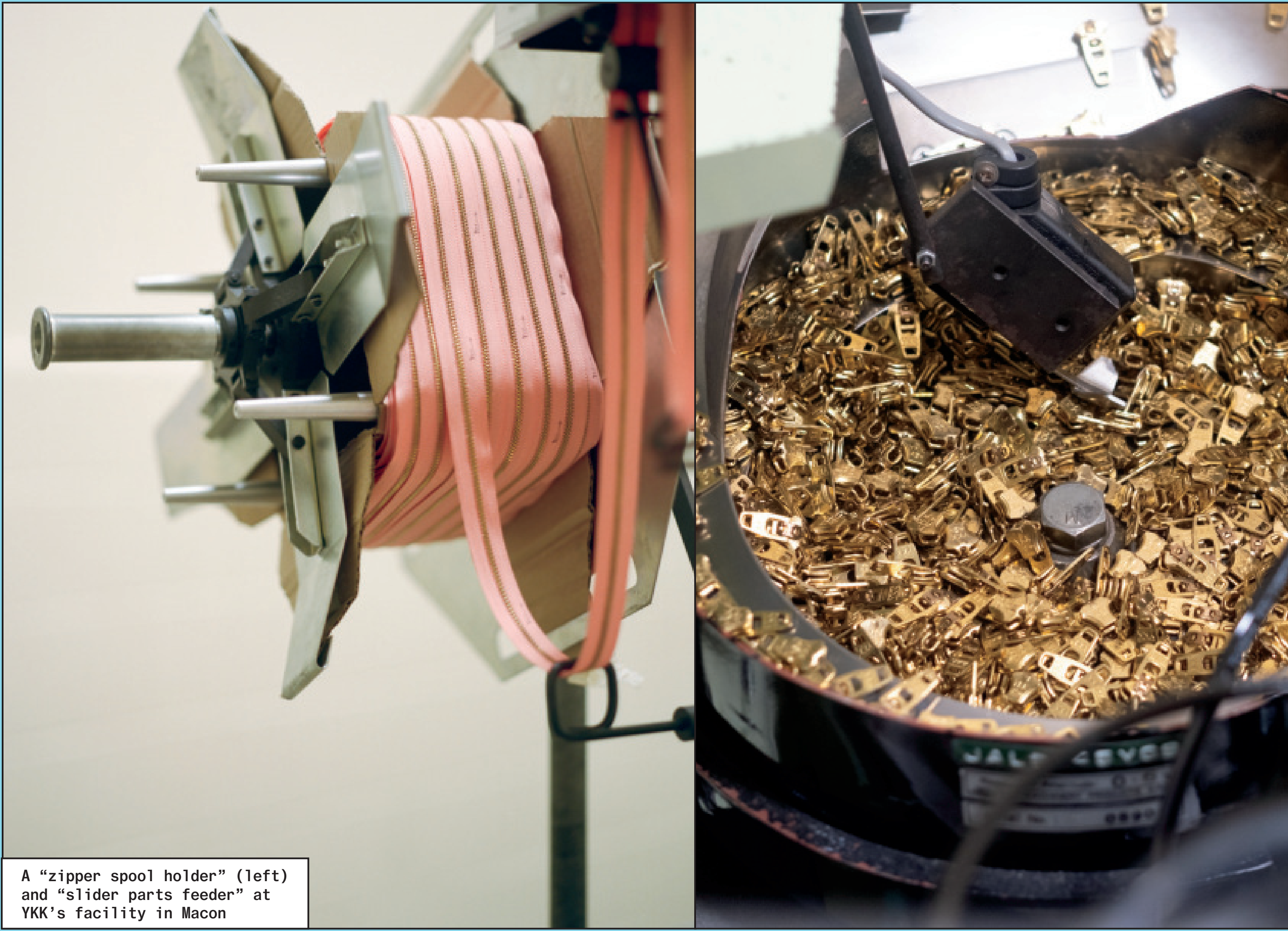
◀ was convinced of its potential, however, given Japan's embrace of Western-style clothing in place of the belted kimono. For years he made YKK zippers by hand, hammering down the individual "elements" (what most of us would call the teeth). In 1950 he imported four expensive chain machines to automate this part of the process. The shift improved the quality of YKK's zippers enough to distinguish them from others on the Japanese market, which were thought to be cheap and disposable.

Five years later, Yoshida packed up his machinery and moved the company to resource-rich Kurobe, which allowed him to build up YKK's production processes and start making everything in one place. He'd also begun traveling the world, looking in places as far-flung as Singapore and Caracas for products his fasteners could help bind together and for ways to improve his processes. When the Korean War caused the price of zinc and copper to soar, YKK developed a durable alloy called aluminum 56S, for use not just in zippers but also in window pane sashes like the ones Yoshida had seen coming off an assembly line during his visit to a US factory. Those sashes were behind his decision to open YKK's first architectural products factory, in Kurobe in 1959.

The following year, the company opened a US subsidiary in New York, which operated a small factory and warehouse in Manhattan's Garment District. "We had many customers and many wholesalers there," said Sarumaru. "Now it's all fancy stores or offices…but in the late '70s, workers were sewing the garments, making the garments right there." At the time roughly three-quarters of the apparel sold in the US was domestically produced, and YKK sought to capture as much market share as possible from its American rival Talon. The company opened branches in Philadelphia, Baltimore and Boston to pursue customers in the high-fashion sector. New facilities in Texas and Georgia focused on supplying jeans manufacturers, and ones in Chicago and Los Angeles targeted workwear and outerwear makers, respectively.

In May, I visited YKK's 250-acre campus in Macon, the largest of its operations in Georgia. The roads connecting each of the seven massive buildings on the property were lined with cherry trees whose blossoms had grown full and

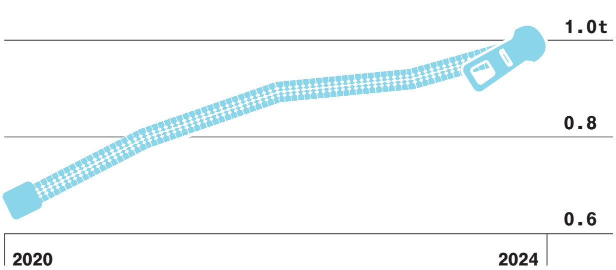
■ PHOTOGRAPHS BY RITA HARPER FOR BLOOMBERG BUSINESSWEEK ■ DATA: COMPANY WEBSITE



A "zipper spool holder" (left) and "slider parts feeder" at YKK's facility in Macon

**YKK GLOBAL NET SALES**

**In Japanese yen**



pink in the spring sunshine. One of these buildings houses a foundry that makes brass for the zippers produced there. Another hosts an architectural products factory that makes door and window systems using aluminum alloys produced at a separate facility in Dublin, Georgia; executives expect it will insulate the company from some effects of Trump's aluminum tariff. And still another has a plant manufacturing enough zippers each year to encircle the Earth two-and-a-half times if laid end to end.

My tour guide was Tom Munns, who supervises a group of workers who maintain a fleet of custom-made machinery YKK leases out to its customers. (The company wouldn't grant me full access to production areas where zippers are actually made, citing a recent policy change inspired in part by concerns over corporate espionage.) I'd originally learned from Alex Gregory—who started at YKK's first Georgia factory in January 1974 and served as the first non-Japanese president and CEO of YKK Corp. of America from 2001 to 2004—how the leasing business works. "We don't sell a company like Levi's individually cut zippers," said Gregory, who's been retired since 2008 but still sits on the board of YKK of America's architectural products division. "They will buy what's called a continuous chain, which is 300 feet of zippers that are continuous, and then they decide how long they want the zipper to be. It might be 5½ or 6 inches, or whatever, and then the machine cuts the zipper to the right length and installs it in the jeans."

In a spacious concrete corridor at YKK's Field Technology Center in Macon, Munns showed me how this machinery works. He started with the first piece of equipment the company began leasing to apparel makers like Levi Strauss & Co. in 1978: a relatively small machine, roughly the size of a table saw in a suburban home wood shop, which is fed a length of continuous chain—basically a strip of cloth a bit wider than a thumb, with a solid strip of metal running down its center—and cuts the metal strip so the teeth are punched out; a second machine roughly the same size takes the cloth, which has already been cut to the appropriate length, and adds a slider and a bottom stop to complete the zipper so it can be sewed onto a garment. Next, Munns showed me the AutoLine, developed by YKK in 1984, which combined and streamlined the processes done by the first two machines. "That's what got us 100% of Levi's business, and Lee's business, and other jeans manufacturers," Munns said. Instead of nine skilled workers the AutoLine required just two unskilled workers to operate. "They saw this, and the competition didn't have it."

The focus on equipment was initially a cost-saving measure. YKK had long struggled to price its zippers competitively against rivals like Talon, before it realized that it would cut down on its labor costs to have customers buy continuous chains and turn them into individual zippers at their own factories. The machinery also only works with YKK products, Munns pointed out, so an apparel manufacturer "couldn't switch to a competitor without changing the way they do things in a pretty significant way." Apparel manufacturers, meanwhile, gained tremendous flexibility, allowing them to make what they needed when they needed it rather than stockpile precut zippers in every possible size and color.

In the decade after YKK began leasing out machinery, annual sales went from less than $100 million to about $450 million. Around this time, in the late '80s, according to Sarumaru, the company stopped "playing catch-up games" and at last seized market dominance from Talon. When NAFTA went into force in 1994 and apparel manufacturers began migrating even more of their facilities out of the US, YKK of America was poised to adapt; the iconic brass zippers used for Levi's jeans, for example, started traveling from Macon to a factory in Mexico rather than to one in San Antonio. YKK also doubled down on investments in equipment, furthering its grip on apparel manufacturing to the south as maquiladora operators sought to increase automation and cut labor costs even further. According to Gregory, executives from one major clothing company told him they saw productivity increase by as much as 20% after switching to YKK's machinery.

The enduring importance of YKK's equipment-leasing business became obvious during my tour of a factory floor in Macon, where it seemed at a glance as though more workers were busy maintaining and refurbishing this machinery than producing the zippers they would use it to install. Whenever workers came and went from the zipper manufacturing line that I was forbidden from touring, I could see through the saloon-style doors just a few conductors for a mechanical orchestra emitting endless strands of zippers bound for Mexico or Central America.

**SOON AFTER GREGORY BECAME CEO OF YKK OF** America, he realized the company was heading for a crisis: Revenue from the US apparel industry that it had wrested away from Talon was suddenly evaporating. China's accession to the WTO in 2001 had established a framework for other member states to take advantage of the country's low labor costs without worrying about what might become of their investments. The Chinese government's incentives and assurances helped make it the preferred place to ▶

◀ outsource clothes manufacturing. “In 1999 we were providing zippers to 99 jeans manufacturing companies, primarily in the Southeast,” Gregory told me. “By 2004 or 2005 they were all gone.”

His arm of YKK was unprofitable by 2003, he said. “And here I am, the first non-Japanese president of a region, and we were in trouble, and the company depended on us to fix it somehow.”

YKK’s management philosophy gives local executives an unusual degree of autonomy in finding solutions for major issues. Treating affiliates as, in a sense, independent local operators helps YKK adapt whenever conditions change. This both helps keep it rooted in the places where it operates and minimizes disruptions to the other links in its worldwide supply chain. As Sarumaru said to me: “Who knows the market? Who knows the customers? Who knows the society? Not headquarters.”

Gregory’s solution to YKK of America’s ills was to tap some of the significant resources its parent company dedicates to R&D: Each year, Sarumaru told me, this expenditure comes to roughly 5% of its total operating budget. In normal times, that money has fueled innovations such as watertight and airtight zippers, initially for divers and astronauts, then deployed commercially in raincoats and ski jackets. Gregory decided to go broad, dedicating vast sums, for one unprofitable year after another, to figuring out how factories that had spent decades producing zippers for jeans and apparel might be rededicated to making fasteners for other products that were still being made in the Americas. Sales and marketing people were paired with product development engineers and assigned to explore specific industries. One team, Gregory told me, “we sent to Novi, Michigan, and we said: ‘Go become experts in the automotive industry.’ And now a typical car in Atlanta, Georgia, will have 15 or 20 products made by YKK in Macon, Georgia. We work with every automobile manufacturer.”

HQ was doing its part too. The decimation of America’s apparel manufacturing industry inspired YKK to create a new global marketing team whose job is to constantly connect the dots between events, trends and existing infrastructure, so that whatever forces dent earnings in one region can be harnessed for profit in another. Its work has become increasingly important as supply chains have grown simultaneously more complicated and more vulnerable.

Teppei Fujimaki, who worked in the sales department for YKK in Bangladesh from 2017 until 2020, during Trump’s first term, told me the company’s global marketing team was able to project for him in advance, based on how far orders had slipped in China, just how much his team would need to increase capacity to prepare for Bangladesh’s subsequent boom in apparel manufacturing. The transition was painless, and from an accounting perspective, it amounted to little more than the shifting of profits from one column in YKK’s Asia ledger to another.

Brian La Plante, a senior sustainability manager for YKK, suggested to me that Trump’s first term, which accelerated trends like “friendshoring” manufacturing out of China and into markets like Vietnam and Bangladesh, showed how the breadth of the company’s operations made it especially adaptable. “Everybody’s talking about tariffs, but all that is just moving around the different cones from one place to another place,” La Plante said. “We’re not talking about reducing apparel production. We’re not talking about reducing the number of units that people are creating. We’re just talking about where they’re going to come from in the future. It doesn’t matter whether it’s Bangladesh, Vietnam, South America, we have facilities that will perhaps gain some business because of those shifts, and some that may lose some business because of those shifts. But it’s not going to impact us overall.”

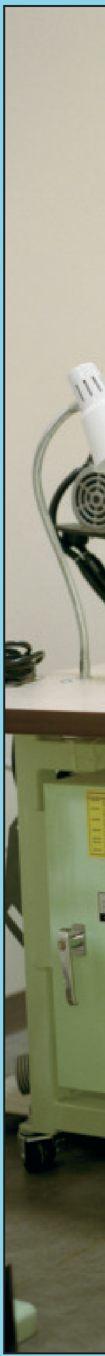
YKK of America’s director of supply chain management, Kozue Childress, said the pandemic, too, had offered lessons for the company. Previously, it tended to stockpile inventory that was already painted and branded for specific clients, which then couldn’t be repurposed for others who needed fasteners when their regular supply chains were disrupted. “We learned that it is important to carry what we call natural material, without any painting or branding, so anytime a customer needs to have a certain color we can paint it and ship it,” Childress said.

When talk turned to how all this might play out in Trump’s second term, Childress optimistically cast it as an “opportunity” for a company as resilient as YKK. She cited as one example the possibility that the company might leverage its brass wire manufacturing plant in Macon. This was months before Trump’s recent announcement of a 50% tariff on copper, which could make YKK an attractive option for North American buyers looking to avoid extra costs imposed on imported brass.

Others I spoke with weren’t quite so focused on the potential upside of Trump’s tariffs. One concern raised by Reed, the current YKK Corp. of America president, was that long-term investment would dry up in markets deemed vulnerable to tariffs. “When you create instability, it stops capital investment,” he said. “So I’m not sure it has a huge impact on day-to-day orders or even month-to-month orders. It may not even have that big of an impact on quarterly orders. But it will have a huge impact on somebody who says, ‘I was just about to break ground on a factory.’ ”

Another concern is that Trump damages consumer confidence badly enough to cut demand for the products YKK helps make. In some divisions, there are signs this is already happening. “The tariff initiatives from the new administration have most certainly had an impact on our business,” Oliver Stepe, CEO of YKK of America’s architectural products division, told me in March, citing the aluminum, steel and Canada tariffs in particular. “We are already seeing a slowdown in business activity in our building materials markets.”

■ PHOTOGRAPH BY RITA HARPER FOR BLOOMBERG BUSINESSWEEK



Reed's view was ultimately that Trump's tariffs would prove less consequential to YKK's business than the creation of the European Union, the implementation of NAFTA and China's inclusion in the WTO were. "The global supply chains are established, and no nation has the ability to make everything it needs by itself–not even China," he said.

Even so, he was watching the machinations with China, in particular. The Chinese government, he cautioned, has a number of options for crippling manufacturing capacity in the US and elsewhere. "Our global supply chains are extremely interconnected, and you're pulling on strings, you don't even know what they're connected to," he said. "Then there's retaliations."

Munns at the Field Technology Center in Macon

Reed invited me to imagine a scenario dire enough to threaten even a company as ostensibly adaptable to tariffs as YKK. "For a modern manufacturing facility in the United States to have been successful, it will have taken advantage of more sophisticated Chinese manufacturing equipment that has been developed over the last 10 years," he said. "So let's say we put a 200% tariff on Chinese stuff, and China can say, 'OK, I know this part goes into 80% of all US manufacturing equipment, so we're just going to no longer provide that part.' "

The result, he concluded, could be devastating: "All of a sudden, you have hamstrung US manufacturing."

**REED'S WORDS PROVED PRESCIENT IN APRIL, WHEN** China suspended exports of rare-earth minerals and magnets crucial for the aerospace, semiconductor and automobile industries. Soon after, Chinese fast-fashion behemoth Shein announced it would raise prices for US customers starting on April 25 to reflect "recent changes in global trade rules and tariffs." Both moves are likely to reverberate at opposite ends of YKK's bottom line, affecting its high-margin products as well as the low-margin trade in fast-fashion zippers. Meanwhile, as Trump wins minor concessions, such as nonbinding oil and gas deals whose economic fundamentals are undermined by tariff-induced price volatility, the rest of the world has signaled through op-eds and political speeches and trade talks a willingness to consider some kind of ex-America globalization.

During my visit to Macon, I'd seen how YKK had taken five-decade-old factories built to make zippers for clothes and repurposed them to produce fasteners for automobiles and medical equipment. The company's reach in modern American life is so deep that I could connect this arc to my own. In all likelihood, I realized, someone in Macon had made the zipper for the first pair of jeans I owned as a boy growing up in Alaska. Maybe they'll help make pieces for the monitor that might sit beside my hospital bed someday.

Products like zippers blow into and out of our lives so easily that they seem almost like natural phenomena. But the supply chains bringing them in are fickle and dependent on a miraculous degree of insight, sensitivity and cooperation. Alex Gregory told me a statistic I found shocking: From 1974 to 2000, some 1 million apparel manufacturing jobs were lost in the US. No one in the industry sincerely believes they'll come back; the numbers don't add up and probably never will, because globalization has conditioned the average American consumer to want what the average American worker cannot provide. Trump's refusal to accept this seems less likely to bring back US apparel manufacturing jobs than to diminish the US auto industry as well–and with it, one more part of YKK's empire, unless its executives can once again adapt. What might get made in Macon instead is, for the moment, difficult to imagine. Ⓑ

ADVERTISEMENT

# Gary Kwok's Winning Formula for Hospitality Investing: Blending Tradition with Transformative Vision

**Drawing from years of financial expertise and practical experience in real estate and hospitality, Gary Kwok has crafted a new playbook for value creation tailored to Asia's evolving market.**

It's an early morning when Gary Kwok, CEO of AXE Management Partners, steps into the lobby of the Garner Hotel. The vibrant, modern space buzzes with energy, as sunlight streams through the large windows, dancing across the geometric flooring. Guests shuffle past with luggage in tow, but Kwok is focused on the team of designers and contractors waiting near the front desk. Dressed sharply in blazer and slacks, he could easily be mistaken for one of the architects rather than the founder of a real estate investment company.

Today's task is to make final choices on room layouts and design. Kwok moves deliberately through the sample rooms, running his hand over building materials while his eyes glance over the numbers in the excel spreadsheet. It's an unusual scene for a real estate financial investor, which are usually found in tall glass buildings giving formal handshakes to bankers garbed in grey suits.

The hotel he visits is part of a strategic move by AXE Management, the Pan-Asian real estate investment company he founded. Last year, they acquired a portfolio of hotels in Osaka, the capital of Japan's Kansai region, from Singapore's CapitaLand Ascott Trust.

The acquisition occurred amid a historic tourism boom for Japan. Attracted by the country's unique appeal and weakened yen, visitor arrivals surged last year, reaching a record high of nearly 37 million, creating numerous opportunities in the hospitality market. While traditional segments such as luxury, upscale and business accommodations are plentiful, quality midscale options that blend lifestyle appeal and affordability near city centers remain scarce.

Kwok moved swiftly to capitalize on the opportunity, partnering with IHG Hotels & Resorts to reposition the acquired properties under the new Garner Hotels by IHG brand, the first of its kind in Asia. Designed to appeal to style-conscious travelers seeking quality and value, Garner combines modern amenities, lifestyle-focused designs, and accessible pricing to meet the needs of this rapidly growing midscale segment.

**Gary Kwok,**
CEO, **AXE Management Partners**

The Garner project's success has further solidified his position in Asia's hospitality investment scene and established him as a well-trusted partner among prominent investors and industry leaders. While financial investors can structure complex

Garner Hotel Osaka Honmachi Kita Semba - 2025 Sky Design Award shortlisted

financial transactions, they rarely possess practical experience in development execution, operations, and management. Conversely, property developers often need to be complemented by experts in dealmaking and financial structuring. In fine, the crux of Kwok's success has been to combine both, a unique skillset shaped by a career marked by bold, forward-looking decisions.

Garner Hotel Osaka Honmachi Midosuji

The US-born investment banking veteran spent years at Credit Suisse and Bank of America Merrill Lynch, where he headed the hospitality real estate business and built a long track record structuring high-impact transactions totaling over US$50 billion. His entry into hospitality came early when he led the IPO of Melco Resorts & Entertainment, one of Macau's leading integrated resort operators. Kwok successfully completed the US$1.3 billion listing on NASDAQ, making Melco the first Macau gaming firm to go public in the U.S. The transaction laid the foundation for the company's expansion and set a precedent that others in the industry would follow.

More than a decade later, Kwok made a rare transition from real estate finance to property development and operations when he became CEO of a publicly listed developer and operator. Leading over 1,000 staff, Kwok immersed himself in real estate development, overseeing end-to-end execution in land acquisition, construction and daily operations. During his tenure, Kwok seized the opportunity to implement transformational changes — redefining company vision and values, and executing growth strategies that doubled the company's portfolio.

Garner Hotel Osaka Honmachi Station

This period shaped Kwok's investment and management philosophy, setting him apart from other investors. "When you invest in operational real estate, especially in hospitality, you're not just buying hard assets — you're investing in a living business that serves customers every day, powered by the people who run it," he explains.

"Conventional real estate investment parameters are important of course. Though it is often forgotten that it is the quality of customer experience that ultimately determines your revenue and cash flow performance, and long-term asset value. That experience is shaped at every stage — from identifying the right opportunity, to determining suitable brands and design concepts, to implementing world class service and amenities standards. In order to truly succeed, you must tailor-make your value-add strategy based on the characteristics of each asset."

The Garner project reflects this philosophy in action. According to market analysts, Japan's tourism surge has highlighted a structural imbalance, with an abundance of conventional midscale hotels but a shortage of lifestyle-driven offerings. Kwok recognized this gap and moved decisively to address it, creating a new concept of experience-driven properties that blend thoughtful design, international service standards and quality amenities with accessible pricing. Early performance indicators, along with strong feedback from guests and brand partners, suggest the strategy was not only well-timed but commercially spot on.

The hospitality sector is inherently a long-term game and success hinges on properties that can thrive over extended periods. Time and again, the market has shown that those who succeed are the ones who embrace a forward-thinking mindset, build motivated teams, and prioritize sustainable value creation. Kwok's approach is uniquely suited to this reality. By combining his practical leadership with a proficiency in structuring large transactions and a commitment to excellence, he has crafted a blueprint for success in the hospitality field, one that is replicable in other markets.

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# Academic Roots, Global Reach: Inside WERU Investment's Deep Tech Strategy

**By leveraging the academic ecosystem of Waseda University and a global network of partners, WERU Investment has built a strong track record of positioning deep tech start-ups for global growth.**

What defines a successful deep tech start-up? For years, this question has challenged both entrepreneurs and investors.

Deep tech ventures are, by nature, highly complex and specialized, often emerging from university labs rather than traditional commercial settings. Because these companies rely on specialized expertise understood by only a select few, assessing commercial potential and identifying the right strategic partners can be as daunting as the science itself. This interplay of technology, business, and collaboration remains one of the greatest challenges in today's venture capital landscape.

Resolving this intricate dilemma is precisely what has defined WERU Investment's success. Founded in 1998 as Japan's first university-born independent venture capital, WERU has backed over 100 early-stage companies, primarily in deep tech sectors. With over 40 successful exits including more than 20 IPOs, WERU has proven its ability to identify and support future market leaders.

At the heart of this success is a unique blend of academic depth and global connectivity.

Rooted in Waseda University, one of Japan's most prestigious institutions, WERU capitalizes on the university's extensive global network and substantial resources, including research-driven innovations with strong prospects for commercialization.

WERU
Investment
www.weruinvest.com

**WERU's investment team**

"Because WERU is rooted in an academic institution, we naturally have access to international academic bodies and research centers," explains Dr. Tadashi Takiguchi, President of WERU Investment.

Since inception, WERU has built a global alliance network spanning more than 20 universities and research centers. Key relationships include SRI International, the renowned Silicon Valley research institute originally affiliated with Stanford University, known for groundbreaking innovations in fields such as robotics, drug discovery, and AI.

In comparison to other Japanese VCs, which have largely remained domestically focused, this global connectivity has turbocharged WERU's sourcing ability. "Because of our strong international network, we are one of the few Japanese VCs with the capability to invest around the world, giving us a distinct competitive edge," says Takiguchi.

Proof of the company's global reach is its investment in LeoLabs, a California-based company spun out of SRI specializing in space situational awareness (SSA)—the monitoring and tracking of satellites and orbital debris. With the number of satellites in orbit expected to grow fivefold by the end of the decade, SSA is becoming critical to the safety and sustainability of space activity. In 2018, WERU led LeoLabs' $13 million Series A funding round.

Beyond proving its global reach, this investment also showcased WERU's unique ability to help international firms enter the Japanese market. In 2021, WERU brokered connection between LeoLabs and Japan's Ministry of Defense, eventually leading to a contract—an exceptional achievement in a country where government contracts are notoriously difficult for foreign companies, let alone start-ups, to secure. Since then, LeoLabs has gone on to earn the trust of leading companies and government agencies across the world.

The LeoLabs story demonstrates that the first beneficiaries of WERU's global network are its portfolio companies. For entrepreneurs, WERU's ability to accurately identify and connect with potential clients, partners, and research networks accelerates commercialization and business growth.

Another compelling example of this is CoreTissue BioEngineering, a Waseda spinout developing regenerative ligament tissue for ACL (anterior cruciate ligament) reconstruction, one of the most common sports-related knee injuries. Built on decellularization technology developed by Professor Kiyotaka Iwasaki, CoreTissue's solution offers a less invasive procedure with lower re-tear risk and shorter recovery time compared to conventional grafts.

With the potential to transform a market already worth over $1.4 billion in Japan and the U.S. alone, WERU activated its global support infrastructure—connecting CoreTissue with Johnson & Johnson, Mitsubishi Corporation, and Fogarty Innovation to fast-track development and global expansion. In 2024, the company launched its first human clinical trial and began preparing for entry into the U.S. market.

So, what truly powers a successful deep tech start-up? If WERU's model is any indication, part of the answer lies in combining strong scientific grounding with a partner that can help connect complex technologies with the optimal people, markets, and institutions.

"When potential partners or investors are approached by WERU Investment, they quickly recognize that we are a rare and unique case in Japan" says Takiguchi. "This distinction creates numerous opportunities that are not readily available to traditional venture capital firms."

ADVERTISEMENT

# Simplex Turns Japan's Corporate Governance Reforms into Premium Investment Opportunities

**Hiromasa Mizushima,** President and CEO, Simplex Financial Holdings Co., Ltd.

If beating the S&P 500 is considered the gold standard for investment funds, then surpassing it in one of its most bullish years through a Japan-only strategy can only be called extraordinary. Yet Simplex's Value Up (VU) Strategy achieved precisely that in 2024, generating returns of over 31% that eclipsed both the S&P and the TOPIX.

This outcome is especially noteworthy given the turbulence in Japanese equities. In August, the market faced one of its worst shocks when the unwinding of the yen carry trade triggered the Nikkei's second-largest single-day drop on record. Yet VU dipped only 2.5% before rebounding by September. In contrast, both the TOPIX and MSCI Japan tallied consecutive months of losses.

This resilience is explained by the fund's philosophy: the VU Strategy does not rely on macroeconomic plays or political forecasts. Instead, it capitalizes on the opportunities created by Japan's ongoing wave of corporate governance reforms.

For decades, policymakers identified excessive risk aversion and entrenched cross-shareholding as contributing factors to Japan's stagnation. This realization spurred a series of reforms in the 2010s, beginning with the Corporate Governance Code and the Stewardship Code, which gained momentum in the years that followed.

By 2023, the Tokyo Stock Exchange urged listed companies to focus on capital efficiency and share price, spotlighting firms with a P/B ratio under 1.0. Simultaneously, the Ministry of Economy, Trade and Industry's Guidelines for Corporate Takeovers limited defensive measures, mandating that any credible offer—even hostile ones—be seriously considered. These steps encouraged the rise of activist investors determined to enhance corporate value.

"These changes have fundamentally reshaped Japan's investment climate," says Simplex President, Hiromasa Mizushima. "Companies are more aware of the risks of remaining undervalued, and they're shifting strategies to unlock higher valuations."

In 2024, the impact of this mindset became clear as share buybacks and M&A activity reached unprecedented heights, while cross-shareholdings fell to record lows—signaling that Japanese boardrooms are more determined than ever to enhance corporate value.

While these changes present a rare opportunity for investors, capitalizing on them requires expertise, cultural insight, and access to management—qualities Simplex has refined since its founding in 1999. Today, it ranks among Japan's largest alternative asset managers while remaining independent, a rarity in a market dominated by subsidiaries of large corporate groups. "Unlike firms operating under corporate umbrellas, we maintain a product-oriented focus, dedicated entirely to creating value for our investors," explains Mizushima.

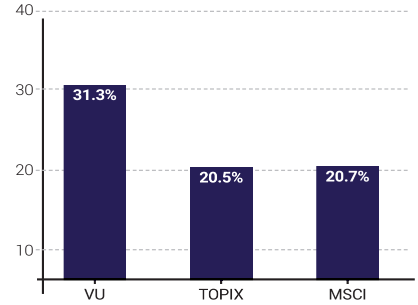
Equally pivotal is Simplex's approach to investor activism, which emphasizes private dialogue and constructive engagement rather than proxy battles or media-driven campaigns. "If a company shows no interest in change, we move on," Mizushima notes. "We prefer partnering with firms committed to closing their valuation gaps." This collaborative approach allows the company to position itself as a solution, not a challenge to board management, enhancing its ability to gain access and information.

Accordingly, the VU Strategy zeros in on targeted opportunities. First, it identifies deep value in companies whose P/B ratio remains under 1.0 and whose EV/EBITDA is notably low. Second, it leverages the unwinding of cross-shareholdings, often through the sale or buyout of listed subsidiaries. Third, it partners with promising enterprises on the TSE Standard or Growth segments, guiding them to strengthen governance and valuation so they can qualify for the TSE Prime.

This model not only aligns with Japan's corporate landscape but also allows Simplex to craft innovative products. Beyond VU, the firm has pioneered several ETFs, introducing Simplex WTI ETF, Japan's first non-index-linked ETF, in 2009. More recently, it launched an actively managed ETF targeting companies with sub-1 P/B and those burdened by cross-shareholdings.

In a period defined by geopolitical tensions, supply chain disruptions, and market volatility, investors are seeking strategies that can demonstrate resilience while delivering benchmark returns. What better way to achieve this than by focusing on companies undergoing meaningful internal transformations?

**Return of Value Up compared to TOPIX and MSCI Japan for 2024**



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"The fundamental drivers behind the VU Strategy's performance are internal," concludes Mizushima. "Because we focus on enterprises implementing reforms and internal changes, our strategy is less susceptible to macroeconomic swings."

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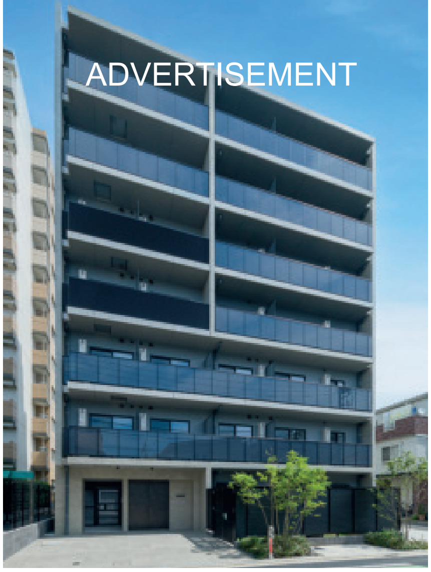

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# Fudeal's Formula for Urban Value

**Fudeal Creation is redefining the future of urban living and investment value in Japan through compact, high-performance condominiums designed with environmental consciousness in mind.**

The future of real estate may not be defined by scale, but by the creation of added value.

In Tokyo, where vertical living intersects with vertical growth, Fudeal Creation is rethinking what it means for real estate to be truly future-ready. As cities around the world face rising population density, environmental pressures, and demands for greater connectivity, Fudeal's approach is gaining attention as it prioritizes the creation of added value over sheer scale.

Tokyo remains one of the most undervalued global markets," says President Nobuki Furukawa, citing its transparency and consistent urban migration. International investors are taking notice. Foreign direct investment into Japan reached a record ¥50.5 trillion in 2023, as institutional funds and high-net-worth individuals turned to Japan as a stable, transparent, and growth-oriented real estate market.

Instead of pursuing mass-scale developments, Fudeal has focused on developing compact, high-performance condominiums under its proprietary RELUXIA brand, which are certified as ZEH-M Oriented and designed with environmental considerations. Renewable energy use and energy-saving features are standard, making them a forward-thinking response to the growing demand for sustainable living and ESG-aligned investments.

While other developers may focus on scale or short-term returns, Fudeal concentrates on delivering properties that retain value, adapt to modern lifestyles, and serve a more engaged, tech-savvy clientele. In doing so, the company appeals to both domestic investors and overseas buyers who seek not only yield, but trust, service, and long-term performance.

Fudeal's office entrance

With land values rising in major metropolitan areas and a steady influx of residents, many centrally located properties are projected to appreciate by 10 to 20 percent over the next few years. But performance is not just measured in appreciation. It's also about user experience.

Fudeal's proprietary smartphone app allows residents and owners to check vacancy status, contract details, and income-expenditure reports. The properties are equipped with facial recognition systems enabling seamless entry from the building entrance to individual units, as well as IoT technology for remote control of home appliances and utilities. Looking ahead, Fudeal plans to introduce energy storage systems as part of its disaster preparedness strategy.

These value-added services are underpinned by Fudeal's vertically integrated business model. The company handles everything in-house—from land acquisition and design oversight to construction, sales, property management, and reinvestment—building long-term relationships with both individual and institutional clients. Looking ahead, Fudeal plans to deepen partnerships with global players, aiming to deliver real estate solutions that combine the precision of Japanese craftsmanship with international standards.

In a market where space is limited but expectations are growing, Fudeal Creation is setting a new standard and showing that the future of real estate lies in purpose-built, value-added living.

**Nobuki Furukawa,** President
Fudeal Creation Co., Ltd.
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FUDEAL CREATION

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# How Ambition DX Holdings Is Reimagining Real Estate Management Through Digital Transformation

**By combining technology with operational insight, Tokyo-based Ambition DX Holdings is emerging as a proptech leader reshaping how real estate is managed, experienced, and scaled.**

Digital transformation is everywhere, from executive meetings to investor updates and industry marketing, all promising smarter, faster, automated operations. But across the real estate sector, one question still hangs in the air: where is the evidence for those improvements?

How many companies can show what DX actually delivers? Shorter deal cycles, scalable operations, better margins, or measurable ROI? For most, digitalization remains a patchwork of disconnected tools. The true shift, the platform shift, has barely begun.

AMBITION DX
HOLDINGS

One reason digital progress has lagged in real estate is the sector's deep fragmentation. Disconnected stakeholders, outdated tools, and manual workflows create persistent inefficiencies. Data is scattered, processes are slow, and growth often depends on adding people instead of streamlining systems. While tech firms lack real estate expertise, property companies lack the internal resources to build tailored digital solutions. Most rely on slow, inflexible vendors that hinder innovation.

The ability to bridge these two worlds is what has fueled the success of Ambition DX Holdings, a Tokyo-based real estate group that has transformed itself into one of the industry's most advanced digital platforms.

"We're not just a real estate company using tech," says founder and president Takeshi Shimizu. "We're a platform company that happens to understand real estate deeply. That mindset gives us our edge."

Ambition Cloud, the company's proprietary platform, has changed the equation. While a typical leasing agency might process 30 contracts per day, Ambition DX Holdings now handles up to 300 with a similarly sized team. By removing friction points, automating workflows, and streamlining communication, it has multiplied productivity tenfold without a proportional rise in headcount.

This operational leap is only part of a broader transformation. While many competitors adopt proptech in fragments, Ambition DX Holdings has developed a fully integrated ecosystem that spans the entire real estate value chain from listing and application to contracting, tenant support, and reinvestment.

The company's journey didn't begin in a software lab. It started on the ground, in the high-volume rental markets of Tokyo, where Shimizu spent years navigating inefficiencies firsthand. "I realized how much time was lost on routine paperwork and repetitive processes," he recalls. "I wanted to focus on work that actually drives value. That's what started everything."

This led to the creation of Ambition Cloud. Developed internally, it is a one-stop, flexible solution that unifies every step of the real estate lifecycle. It connects property owners, tenants, leasing agents, and insurers in a shared environment. From application to contract, from utility setup to repair requests, everything happens online on one system.

At its core is Ambition Sign, a blockchain-based module that digitizes and secures the entire rental transaction flow. Unlike partial e-signature tools, it covers document execution through to post-move-out inspections and renovations. This ensures not only efficiency and transparency but also legal and procedural integrity at every step.

Delivering that kind of functionality requires more than technical execution. It demands thoughtful design. Ambition DX Holdings has placed user experience at the heart of its platform philosophy. The system wasn't built by detached engineers but by a team with hands-on industry experience. They understood the friction points and how to eliminate them.

As a result, the platform has expanded beyond Ambition DX Holdings' internal operations. Today, third-party owners, asset managers, and brokers use the system for its embedded compliance, documentation, and communication tools. "The more users join, the more powerful the system becomes," says Shimizu. "We are seeing that network effect accelerates."

In fiscal 2024, Ambition DX Holdings reported over 42 billion yen in revenue, with a 30 percent year-on-year increase and nearly doubled operating profit in the first half of 2025. Yet Shimizu believes the market still misjudges them. "We are not being valued like a technology platform. We are still seen as a traditional real estate business," he says. With a price-to-earnings ratio of 7.3, well below the tech sector average of around 35, there might be some truth in his words.

In a sector still tethered to legacy infrastructure, Ambition DX Holdings offers something fundamentally new. It is a platform-based, data-informed, user-centric model for how real estate can operate. While much of the world still asks when digital transformation will arrive, Ambition DX Holdings is showing what it looks like when it already has.

**Takeshi Shimizu,** President,
**Ambition DX Holdings**
**https://am-bition.jp**

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THE JEWELRY SPECIAL

# PURSUITS

## WHY ART DECO STILL MATTERS

By Kristen Shirley
Photographs by Joanna McClure
Prop styling by Sonia Rentsch

When a magnificent collection of jewelry came up for auction at Christie's last November, everyone knew it would be a blockbuster. The dazzling array of diamond, ruby and emerald concoctions commissioned from Cartier on Bond Street in London in the 1920s and '30s had remained in the hands of the Sassoons, a prominent Baghdadi Jewish dynasty, for the ensuing century. It even survived the bombing of the bank where it was stored during World War II. The group's star lot—an exceptional Indo-Persian art deco diamond necklace weighing from 130 carats to 140 carats—was a rare example of historic preservation from an era in which most significant jewels were sold off or remodeled. And it was priced accordingly, with a high estimate of 1.3 million Swiss francs ($1.63 million).

A pavilion at the 1925 Paris expo

It sold for 4.4 million francs—one of many recent testaments to the enduring appeal of art deco, which celebrates its 100th anniversary this year.

Marlene Dietrich wearing Van Cleef & Arpels in 1950's *Stage Fright*

The aesthetic, which shaped fashion, architecture, art and jewelry, began in the 1910s, flourished in the Roaring Twenties and then waned during the Great Depression. Although it lasted a mere 20 years, the movement had an outsize impact on design for decades to come, and contemporary independent designers (page 86) still find inspiration in its clean lines and bold shapes. "Art deco remains the most popular period for collectors," says Benoît Repellin, the worldwide head of jewelry at Phillips auction house.

The style officially burst into the international spotlight in 1925 with the Exposition Internationale des Arts Décoratifs et Industriels Modernes. (Hence "art deco.") Organized by the French government as a platform to showcase modern design, the Paris expo had initially been scheduled for 1915 but was delayed by the onset of World War I. When it finally opened a decade later with exhibitors from 21 countries, more than 16 million people visited, perusing roughly 15,000 pieces from the biggest names of the day, such as René Lalique, Le Corbusier and Jeanne Lanvin. Émile-Jacques Ruhlmann's Le Pavillon de l'Élégance came to define art deco interior design.

The work on display was a revelation. At the end of a brutal war, advances in aviation and automobiles, as well as the spread of electricity, were quickly remaking the world. Avant-garde art and literature were flourishing—it only made sense that new forms in decorative art would sweep through as well. "Art deco was a response to a time when there was a lot of hope about the world being in a really exciting, modern place," says Briony Raymond, a designer and vintage jewelry curator. "There was a lot of opulence in the Roaring Twenties."

The new geometric motifs were a departure from the lush, nature-inspired forms that had defined the prewar aesthetic—the "organic, swirly-whirly world of the art nouveau period," Raymond says. Alexandrine Maviel-Sonet, patrimony and exhibitions director at Van Cleef & Arpels, agrees. "Art nouveau was really pastel, round shapes and complex art," she says. "Art deco was completely different: Simple, it's very geometrical, and they wanted the contrast of color."

In the mid-1910s, designers, including Van Cleef, had already begun making pieces that explored this idea. Bichromatic baubles paired onyx with diamonds or colored gemstones—typically emerald, ruby or sapphire—and used bold patterns to highlight the sharp contrast. Later, in 1919, adding a third color became fashionable, and diamond-onyx pairings with one colored gemstone became a hallmark of art deco jewelry.

Throughout this piece, photographer Joanna McClure captures a mix of contemporary and vintage jewelry from the world's most famous maisons—showcasing art deco's range and enduring appeal.

Previous page, from top: Lugano black ceramic and emerald-cut diamond earrings; Chanel High Jewelry Charleston fringe necklace with diamonds and onyx. *Prices on request*

■ PAVILION: MAURICE BRANGER/ROGER VIOLLET/GETTY IMAGES. DIETRICH: SUNSET BOULEVARD/CORBIS/GETTY IMAGES

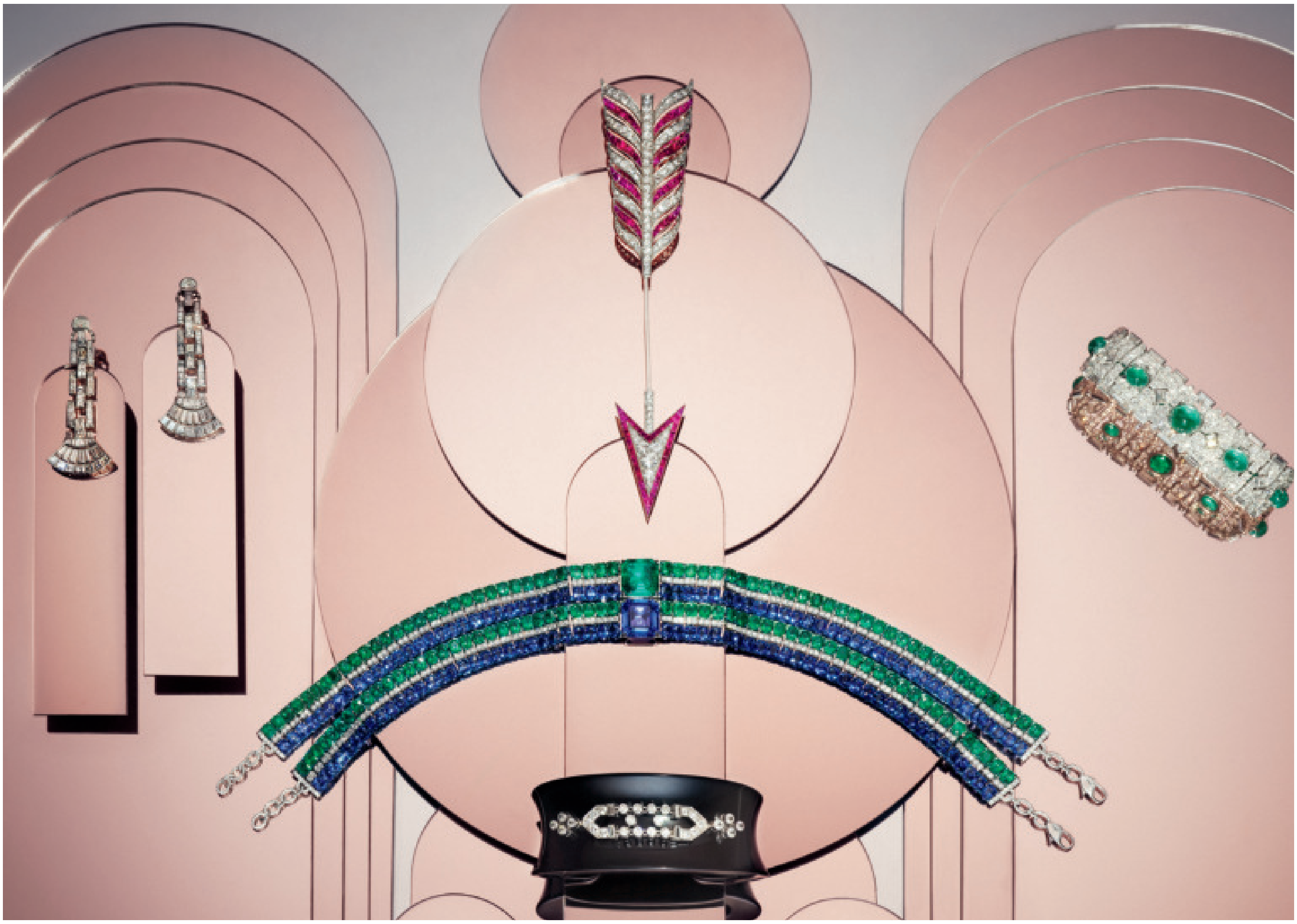
Ultimately, though, not a singular style or motif defines art deco. It “encompassed a lot of different design movements happening during that time,” Raymond says. “If I wanted to distill it down into a really simple description, I would say less organic, more geometric, less free-flowing, much more bold and architectural.”

Art deco jewels could be flat or have lots of volume with carved gemstones and cabochons. Platinum became a hallmark, but gold was used as well. This diversity is a reason art deco remains so popular. “We call it a movement, but the name came much later in the 1960s, when they looked back at this period of the ’20s and ’30s,” says Phillips’ Repellin. “It’s actually very broad.” Motifs from East Asia and India influenced jewelry designers, he says, which led to the birth of Cartier’s Tutti Frutti jewels, a quintessential art deco design that nonetheless features colored gems engraved in the shape of leaves, buds and berries punctuated with diamonds and onyx or black enamel. These more maximalist pieces still fetch lofty prices—a Tutti Frutti necklace sold for $8.7 million at auction last year.

Jewelry was an undeniable highlight of the 1925 expo. Aside from Cartier, Boucheron presented 232 pieces, and Van Cleef exhibited dozens, with its Entwined Flowers, Red and White Roses bracelet winning grand prize. Collectors embraced the movement immediately. In 1928 the Maharaja of Patiala, in northern India, brought several trunks filled with gemstones to Boucheron’s boutique on Place Vendôme in Paris and placed the largest order the maison had ever received.

“The majority of these pieces were typical of the art deco style,” says Hélène Poulit-Duquesne, chief executive officer of Boucheron. “Everyone was obsessed by the new style.” That included the Duke of Windsor and Wallis Simpson, the Rothschild family and Woolworth heiress Barbara Hutton.

Art deco jewelry also took over Hollywood. Stars including Mae West and Jean Harlow donned the geometric styles in their movies, no matter the film’s time period. *Cleopatra*, from 1934, was “the most art deco movie ever,” despite its ancient setting, says Jaci Rohr, who was a jewelry and costume archivist at Paramount Pictures. In 1935, *Cleopatra* star Claudette Colbert wore a significant art deco necklace from American jeweler Trabert & Hoeffer in *The Gilded Lily*, thought to be one of the first examples of fine jewelry product placement in film. But perhaps the most magnificent piece to grace the silver ▶



From left: Vintage Egyptian lotus flower diamond earrings ($68,500 at Briony Raymond); Chopard Haute Joaillerie necklace (price on request) with sapphires, emeralds and diamonds; 1930s Bulgari diamond-and-ruby brooch (price on request at Yafa Signed Jewels); Belperron carved jade-and-diamond Saddle Series Cuff No. 6 bracelet (half of a $64,000 pair); vintage Chaumet bracelet (price on request at Fred Leighton) with 18.5 carats cabochon emerald and 18.75 carats diamond

◀ screen was Marlene Dietrich's own ruby and diamond Jarretière bracelet from Van Cleef, which she wore in *Stage Fright* in 1950. (It sold for $4.53 million at Christie's in 2023.)

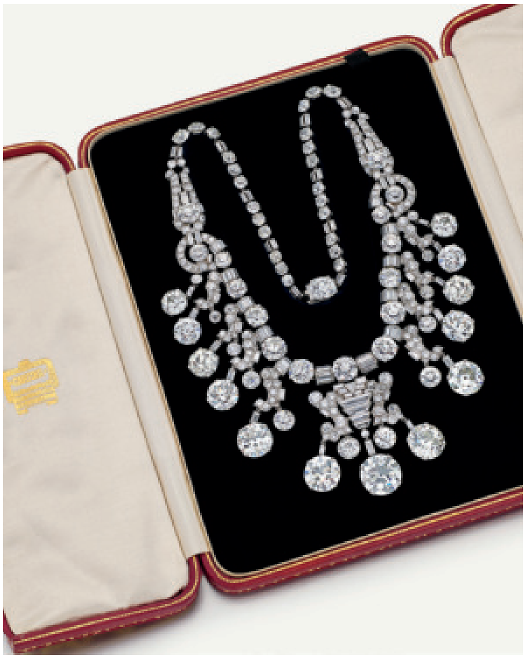
Architecture followed on a naturally longer timeline: New York's iconic 1930s Chrysler Building and Rockefeller Center, the hotels along Collins Avenue in Miami Beach from the '20s through the '40s, the Griffith Observatory in Los Angeles, the 1933 Battersea Power Station in London, Paris' Palais de Tokyo and Folies Bergère, and entire neighborhoods in Mumbai and Napier, New Zealand, are all tribute to the power of the movement. Even today the elevators in many office buildings bear the clean lines and formal shapes of art deco's influence.

When the Great Depression hit, the era of frivolity, flappers and massive diamonds came to an end. Art deco designs increasingly made use of semiprecious materials, such as rock crystal, lapis, agate and amber, until a more somber sensibility took hold preceding World War II. British journalist Bevis Hillier is credited with its modern resurgence—and retrospectively naming the artistic movement—after publishing a book in 1968 that highlighted its beauty.

OPPOSITE PAGE
Van Cleef & Arpels Diamond Tie necklace with Asscher-cut diamonds; Cartier Nature Sauvage High Jewelry earrings in platinum with diamond and onyx; Boucheron Vendôme Liseré earrings with diamonds and black lacquer. *Prices on request*

Art deco jewelry, in particular, has a distinct visual sensibility that somehow feels more modern than designs from recent decades. "When clients start collecting jewels or looking at jewels, it's nice to have something that you recognize and you know it's typical of that period," Repellin says.

This insatiable appetite continues to influence contemporary jewelry design as well. Creative directors at historic houses look to their archives for inspiration, and incorporating art deco elements can help clients decide to make a seven-figure investment. They don't have to worry that it will be out of style in a few years, and they'll be able to wear it on many occasions. "Brands know if they have a bit of an art deco twist, they will have buyers for their high-jewelry pieces," Repellin says.



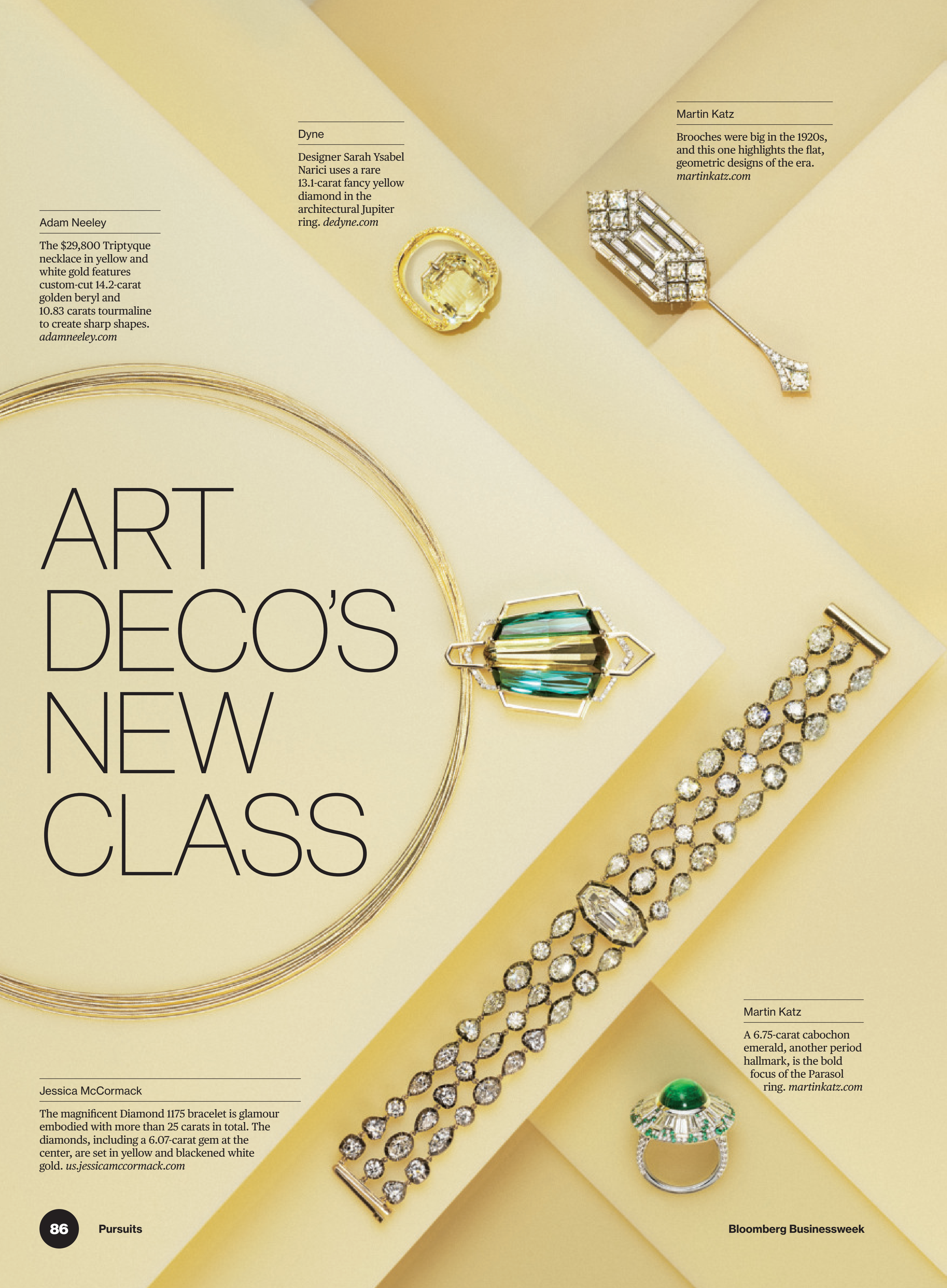
The Sassoon Cartier necklace, circa 1935, sold for 4.4 million Swiss francs in 2024

Colbert in 1934's *Cleopatra*

■ SASSOON NECKLACE: CHRISTIE'S IMAGES LTD. 2025. CLEOPATRA: SCREENPROD/PHOTONONSTOP/ALAMY

A few years ago, for example, Poulit-Duquesne wanted to highlight Boucheron's rich art deco history, and the maison unveiled a high-jewelry collection called Histoire de Style, Art Deco, inspired by its most exquisite pieces. Creative director Claire Choisne used a strict color palette with emeralds, diamonds, rock crystal and onyx, playing on many of the era's themes. The following year, Boucheron released a collection inspired by the orders placed by the Maharaja of Patiala and other royal Indian collectors.

Museums aren't missing their chance to celebrate art deco's lasting appeal either. Cartier has a massive show at the Victoria and Albert Museum in London, open through Nov. 16, that includes many art deco masterpieces. And in October the Musée des Arts Décoratifs in Paris will unveil "1925-2025. One Hundred Years of Art Deco," an ambitious retrospective that will cover the style's early days in the 1910s through its resurgence in the '70s, including new permanent rooms dedicated to it. Visitors will have the chance to stand before some of the original creations and imagine the moment that gave rise to a movement—a time of joy, beauty and infinite possibility. Ⓑ



# ART DECO'S NEW CLASS

**Adam Neeley**

The $29,800 Triptyque necklace in yellow and white gold features custom-cut 14.2-carat golden beryl and 10.83 carats tourmaline to create sharp shapes. *adamneeley.com*

**Dyne**

Designer Sarah Ysabel Narici uses a rare 13.1-carat fancy yellow diamond in the architectural Jupiter ring. *dedyne.com*

**Martin Katz**

Brooches were big in the 1920s, and this one highlights the flat, geometric designs of the era. *martinkatz.com*

**Jessica McCormack**

The magnificent Diamond 1175 bracelet is glamour embodied with more than 25 carats in total. The diamonds, including a 6.07-carat gem at the center, are set in yellow and blackened white gold. *us.jessicamccormack.com*

**Martin Katz**

A 6.75-carat cabochon emerald, another period hallmark, is the bold focus of the Parasol ring. *martinkatz.com*

Even as art deco turns 100, some of the most prominent independent jewelers working today say it's still inspiring them. Geometric motifs, stark whites and blacks, simple pops of color and repetitive structures are the common threads between pieces a century old and these modern masterpieces.

For designers Martin Katz, Nikos Koulis and Adam Neeley, the era's rigid lines and strict shapes were a direct influence, but each has adapted them in different ways. The Beverly Hills-based Katz crafts pieces that are so faithful to the art deco format, they look plucked from a vitrine in the 1920s. Similarly, when the Laguna Beach-based Neeley veers from his typical organic style, the designs feel period-correct.

Koulis, a Greek designer with boutiques in Athens and Mykonos, puts a more sinuous spin on the style with his popular Oui collection, which he introduced in 2015 and adds to each year. Instead of onyx, every piece features black enamel fired using a traditional Greek technique, which contrasts with white diamonds and colored gemstones. "It channels one of my favorite aesthetic influences, art deco," Koulis says, "reinterpreting it through my contemporary viewpoint."

Fernando Jorge was inspired by New York City's iconic buildings of the period when he designed the new Vertex collection, which highlights baguette diamonds and yellow gold in sculptural shapes. "I became fascinated by the architectural potential of diamonds, especially the step cuts and sharp edges of the baguette, which so perfectly embody modernity and refined simplicity," he says.

James de Givenchy, founder and designer of Taffin, regularly combines elements from the movement, such as contrasting colors and natural pearls. "I wanted to bring the geometry and glamour of art deco into a bold modern language," he says, "merging sculptural forms, rich materials and unexpected contrasts."

For the examples of contemporary art deco jewelry pictured here, prices are upon request unless noted. —*K.S.* Ⓑ

Nikos Koulis

Almost 12 carats of glittering white diamonds are highlighted by black enamel in this $100,760 Oui necklace. *nikoskoulis.com*

Fernando Jorge

The Vertex earrings have more than 10 carats of baguette-cut diamonds. *fernandojorge.co.uk*

Taffin

These drop earrings are a mismatched combination of pearls, emeralds and diamonds, anchored by a large 18.32-carat natural pearl and a 16.3-carat Colombian emerald. *taffin.com*

THE GIFT SHOP GOES LARGE

# IN OUR POP-UP ERA

By Sarah Rappaport

On a scorching day in Taormina, Sicily, guests at the Four Seasons San Domenico Palace usually would be worshipping the sun by the infinity pool overlooking the Ionian Sea. But on a visit in mid-June, as I peer around from my perch on a cloudlike chaise, I realize everyone else staying at this picturesque former convent is more concerned with the towels. The lounge liners, swathed in a cobalt-blue floral motif that looks like Mediterranean ceramic tile, are positively delectable. They're Dolce & Gabbana and available for purchase at the hotel shop for about €559 ($656) apiece.

In fact, almost everything on the pool deck sports the same fanciful print. It's all part of a summer resort takeover by the Italian fashion powerhouse: The umbrellas, the floats, the ceramic planters and even the napkins are D&G branded.

This is luxury writ (very) loud—and it's a trend playing out at hotels in almost every major summer destination, especially in Europe. Burberry tweeds deck out the Newt, a British resort in the Somerset countryside; Dior-branded buoys beckon in the water outside the Jumeirah Capri Palace off the Amalfi Coast; Missoni stripes cover the pool decks of the beach resorts Oku Ibiza and Cali Mykonos; Jacquemus' banana-yellow sunbeds have taken over the beach club at the Monte-Carlo Société des Bains de Mer. The list goes on and on.

Don't want to pay $1,000-a-night room rates to stay at some of these resorts? Day visitors can order a €26 Champagne cocktail at the Aquazzura-branded garden bar at Rome's Hotel de Russie. But only overnight guests at the San Domenico Palace are afforded the privilege of buying a certain €1,700 silk D&G shirt from the hotel boutique.

When I hit the store myself—it's housed in a former sacristy—I gaze up at the frescoes and consider charging a dress to my credit card. I am just barely able to resist the glamour of the moment. Instead I head outside, where, conveniently for my bank account, a D&G-branded gelato cart is serving free granita.

These partnerships hit a travel sweet spot: They're ephemeral experiences that create a sense of urgency ("Get there now, before it's gone!") and encourage social media sharing ("I was there, and I can prove it!"). And they're happening at a time when travel is thriving—but retail is not. A June report from Bain & Co. says the luxury sector is undergoing its first contraction in 15 years, and a May survey from Chase Travel shows 38% of cardholders plan to spend more than they did last year on globe-trotting adventures, even amid deep economic uncertainty.

"The only luxury sector that's actually growing now is hospitality," says Fflur Roberts, global insight manager for luxury goods at Euromonitor International. That success has

Dolce & Gabbana's takeover at San Domenico Palace, a Four Seasons Hotel

■ COURTESY FOUR SEASONS

spurred unprecedented expansion among top-tier hotel brands, which means everyone else needs to work hard to stay relevant. Pop-ups are a brand-safe way to do just that.

Guests are even starting to expect them, says Eric Mourkakos, owner of Cali Mykonos, which opened in 2022 and charges nonguests €100 for day passes to its Missoni resort club. Chase's survey backs up the demand, noting that 79% of Generation Z travelers want to shop on their travels, and 64% of them seek out limited brand collabs.

"It's an equation where everyone wins," says Cristina Borges, who teaches a course on luxury fashion and lifestyle trends for the prestigious Les Roches International School of Hotel Management in Switzerland. "Fashion brands gain easy exposure to a new, affluent audience. Hotels can offer exclusive experiences to their guests. And customers get to have fun and feel part of exclusive moments and post about them." Plus, she says, "retailers need to meet their clients in the one place that they are still happy to spend money."

A three-month Fendi partnership last year at Puente Romano Marbella on Spain's Costa del Sol cost about $600,000, says Borges, who was formerly its marketing director. The resort split that outlay with Fendi, then reaped $1 million in added profit—plus reams of media exposure.

Andrew Foulkes, CEO of hospitality at the Newt, says the goal of its Burberry pop-up is buzz and new guest bookings. "We are really trying to grow our reach in America, where Burberry is big," he says. And it benefits his partner too: "It's amazing how many people want to come and buy a Burberry bucket hat."

Of course, brand dilution is a concern. "You don't want your hotel to feel like an ad for someone else," says Rosewood Regional Vice President Edouard Grosmangin, who's installing a partnership with Brazilian menswear label Frescobol Carioca at its Riviera Maya outpost in Mexico. "We're keeping it very discreet, no logos anywhere."

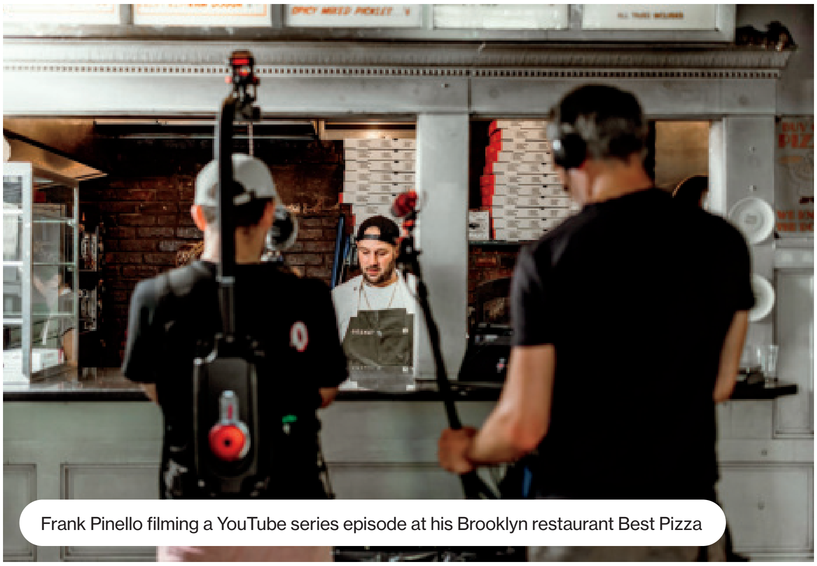
To his point, you really don't need Dolce & Gabbana anything to feel fabulous at the San Domenico Palace, which served as the backdrop to Season 2 of HBO's *The White Lotus*. Still, I channel the enthusiasm of a group of American teens posing for selfies with their scoops of that D&G granita, and I post a picture with my own—in a refreshing jammy fig flavor—before it melts. The image gets more likes on my Instagram than anything I've shared in recent memory. Ⓑ

—*With Nikki Ekstein*

YOUTUBE UNIVERSITY

# Action, Chef!

By Kate Krader



Frank Pinello filming a YouTube series episode at his Brooklyn restaurant Best Pizza

It was the fall of 2023, and James Lowe, the London-based chef who'd made Lyle's one of the UK's best restaurants, realized he needed help. Despite 20 years of cooking experience, including stints in elite kitchens such as the Fat Duck and the River Cafe, the 45-year-old had never butchered a bluefin tuna. The UK had just awarded local licenses to catch the fish, though, so Lowe had ordered a 180-kilogram specimen from a favorite supplier in Cornwall.

Carving up the pricey fish–especially a daunting behemoth of 400 pounds–is no small endeavor. "Almost none of my chefs had prepped it before, and every piece has a different name," Lowe says. Not even the knives they used regularly were meant for the task.

Lowe turned to YouTube. First he and his team watched hours of Japanese fish experts in action, some with knives the size of a sword. "We searched keywords like 'butchery' and 'markets in Japan' and 'Taiwan,' " he says, "to weed out amateurs and see people who were doing this every single day." It took well over an hour to carve the fish into main pieces, Lowe says: "It would now take about 10 minutes with the right tools and experience."

Lowe wasn't done with his YouTube research. "We dropped in sushi restaurant names to see what unexpected things they were doing," he recalls. He and his crew then experimented, and one of the results at the now-closed Lyle's–a tartare served with melted tuna fat toasts–made my list of that year's best dishes. YouTube, Lowe says, is "an incredible tool for getting information quickly."

In the past a chef like Lowe would have pored over cookbooks with pictures and diagrams, or called in an expert for a demo or to do the job themself. But photos can take you only so far, risking expensive mistakes, and you don't learn if someone does it for you. Just as athletes watch training videos to improve performance, chefs can now access a vast library on YouTube to hone their craft.

Food videos are, of course, nothing new. You might consider Julia Child an early culinary content creator (I do) with her series *The French Chef*, which made its public television debut in 1963. After the Food Network premiered 30 years later, home cooks picked up countless tips from the likes of Emeril Lagasse and Bobby Flay. Today almost every social media platform has a wealth of instruction geared toward home cooks (especially if their goal is to get dinner on the table in five minutes using even fewer ingredients).

YouTube in particular has been a gold mine for cooks: Monthly uploads of food and drink videos have shot up from 171,000 in January 2024 to 315,000 in June 2025, according to analytics firm Tubular Labs Inc. And in a 2023 post on its Culture & Trends channel, YouTube attributed 80 billion views in the first 11 months of the year to videos from street food heavyweights such as Roy Choi of Los Angeles-based Kogi BBQ. YouTube has become an increasingly useful resource for professional chefs who know what to look for. In recent years, it's also helped skilled amateurs earn culinary reputations and even open their own restaurants.

In London, Max Lewis worked in software before discovering New Haven, Connecticut-style pizza on YouTube during the pandemic. Now he's slinging pies at his year-old Lenny's Apizza in Finsbury Park. Another newly minted UK pizzaiolo, David Ratcliffe, owner of Detroit-style Ria's in Notting Hill, also credits YouTube with giving British wannabe pie makers exposure to–and tutorials on how to make–regional American pizza styles that are easier to produce than the once-ubiquitous Neapolitan pies.

And it gets wonkier from there. Jonathan Tam, chef-owner of the Michelin-starred Jatak in Copenhagen, was searching for Japanese cooking techniques while he worked at the legendary Noma back in 2008–and discovered Seiji Yamamoto, the chef behind Nihonryori RyuGin in Tokyo. "He was studying eel with an X-ray scan to see how to cut through it, and showing his duck prep," Tam says. "He would quickly freeze the crown with a nitrogen gun in between searing." No easy moves for an amateur to tackle, but catnip for pros.

■ PHOTO: COURTESY GOZNEY ■ ILLUSTRATIONS BY MARINE BUFFARD

“Chefs didn’t used to share their recipes,” says Wylie Dufresne, who earned fame for his modernist Manhattan restaurant, wd~50, in the early 2000s. Now people give away their knowledge freely. It’s an exciting moment for everyone, he says, “even those of us who have been in the food business for a really long time.” YouTube helped him develop a new craft: skills for Stretch Pizza, his inspired pie spot in New York’s Flatiron District.

In fact, YouTube university has begun to supplant the education traditionally earned by working in elite kitchens. “When I was coming up—I graduated cooking school in 2007—it was about working for chefs in the most intense kitchens,” says Frank Pinello, whose Best Pizza is a Brooklyn powerhouse. “That’s how you got started.” Now he sees that education streaming from a screen. A few years ago, Pinello, a YouTube star in his own right, encountered Norma Knepp, who operates a tiny stand at Root’s Country Market & Auction in Lancaster County, Pennsylvania. “It didn’t seem like a place you would go out of your way for pizza, but she was killing it. She said she learned by watching YouTube.”

Rasheed Philips, known on social media as the Gentleman Smoker, runs the roving Philips Barbeque in Lawrenceville, Georgia. He honed his singular Caribbean-accented live-fire style by watching pitmaster Malcom Reed and old episodes of *Man Fire Food* on repeat. “I’m a visual learner,” he says. Philips also credits YouTube with helping chefs bypass the traditional paths and start earlier. “There’s a massive shift towards younger cooks because of YouTube,” he says. Philips cites the Texas-based junior barbecue competitor Rae Barker, known on social media as Lil’ Gringa. “She got there watching videos,” he says. He also name-checks Evan Wiederspohn, who was competing on the barbecue circuit at age 14, using techniques he learned online. Now, says Philips, “he’s 19 and about to open his own food trailer.”

But even YouTube may soon be eclipsed. “TikTok. That’s what my younger chefs use,” says Jatak’s Tam. “A 10-second clip of something being piped or an interesting cake.” Indeed, with its easy-to-absorb, hypershort format and algorithm that feeds users exactly what they want—whether it’s a shortcut to Alain Passard’s famed hot-cold soft-boiled eggs or a lesson on the latest Cedric Grolet pastry—its reach is only expanding.

“TikTok brings something to their attention,” Tam adds. “Maybe it leads to deeper research. Or maybe that’s all the information they want.”

CEO DIET

# How to Sleep Like the Boss

By Kate Krader

### DARA KHOSROWSHAHI

CEO of Uber

“I used to wear a smart health tracker that rated my sleep, and I absolutely loved it. As someone who is really into data, getting detailed insights was right up my alley. But eventually I got a little too into it, competing with myself every night. These days, I’ve gone back to falling asleep the old-fashioned way—no tracking, just reading. Get rid of the screens, and you’ll be ahead of the game.”

### JACOB AARUP-ANDERSEN

CEO of Carlsberg Group

“If I wake up earlier than planned, I don’t fight it. I get up and get going. Trying to squeeze in more sleep often leaves me groggy and throws off my rhythm for days. Instead, I use that extra time to work out or run, which helps me reset and sleep deeply the following nights. It’s about listening to your body.”

### AMINA BELOUIZDAD PORTER

CEO of private airport terminal operator PS

“We’ve finally moved past bragging about no sleep. I aim for a consistent seven to eight hours every night. It’s nonnegotiable.”

### TONY TJAN

CEO of nail-care brand MiniLuxe

“I’m trying to be better. The biggest shift has been a routine that includes a microsession of meditation with a sound bowl. Then earlier to bed and super early to rise. I’ll never forget a saying that Tom Brady once shared with me: ‘You can’t be soaring with the eagles in the morning if you are hooting with owls late at night!’ ”

### MICHAEL KIRBAN

Co-founder and executive chairman of Vita Coco

“This might sound counterproductive, but my best hack for a good night’s sleep is to make time for a nap—at least 40 minutes a day. They help me turn my brain off more easily when I go to bed at night.”

### PETER MCGUINNESS

CEO of Impossible Foods

“I don’t optimize sleep. And that’s not a good thing to brag about. I understand why it’s necessary—I’m not philosophically against sleep; I just don’t do a good job. I probably travel too much and have a little too much on my mind, and then sadly I’ve learned to function without lots of it. I just kind of power through it. But I’m not too old to learn.”

### KONSTANTIN SIDOROV

CEO of tech investment group London Technology Club

“I’ve been lucky in that I’ve always been able to sleep, despite my 20 espressos a day. I typically have a late, sociable dinner with fine wine, which I’m sure helps.”

### RAYNI WILLIAMS

CEO of luxury real estate firm Beverly Hills Estates

“I’ve developed a wind-down routine that really works. I take magnesium, zinc and a cortisol balancer to help regulate stress. A shower followed by a full skin-care and self-care regimen helps signal to my body that it’s time to rest. I’ll often journal to clear my mind and always incorporate deep breathing work to center myself.”

### SAM CALAGIONE

Founder of Dogfish Head Craft Brewery

“I take a half-hour bath every evening, below a giant photograph of André 3000 playing a flute. It calms me as I read, but it freaks my wife, Mariah, out a bit, which may be why we have separate bathrooms.”

THE ONE

# i, Coldbot

By Sal Vaglica

Photograph by Frank Frances   Prop styling by Olivia Demetros

For all their boasting about weeklong ice retention and bear-resistant construction, premium roto-molded coolers from Yeti, Pelican and Rtic still require you to load in pounds of cubes. But Anker, best known as a battery maker, has an ice-free solution: a portable mini-fridge on wheels.

The $900 Solix EverFrost 2 uses removable, rechargeable batteries to power a compressor and fan, an essential for premium electric coolers, bringing the inside temperature to between 68F and -4F—likely colder than your kitchen freezer. To keep sodas crisp and sandwiches safe, dial in a refrigerator-like 40F via the intuitive app or on-unit dashboard, or drop the digits down to ensure your Otter Pops and Chipwiches remain solid as can be.

The EverFrost 2's temperature versatility is overkill for day drinking at the beach, but it's a boon for food safety on longer outings, such as camping and fishing. Plus, without all the ice, its 40-liter capacity is surprisingly roomy, offering space for 62 cans. Typically, cooler manufacturers recommend devoting two-thirds of capacity to ice.

Unlike vacuum-insulated iceless coolers, which only keep already cold things cold, the Solix will also chill warm items—though going from room temp down to 32F presented a significant power drain in testing. There's a slot for a second battery ($249) that can extend the 52-hour maximum run time to a little more than four days and help quell cooler range anxiety. A larger 58-liter model ($1,100) splits its storage in two, giving you the option to have a refrigerator and a freezer.

Still, most users will likely keep the EverFrost 2 close to home (or the car), in part because at almost 56 pounds empty (and 30 inches long), getting a fully loaded one out of the trunk is a two-person job. Six-inch-wide wheels (or 9.6-inch beach rims for $100), along with a handle that folds out into a side table, are ideal for navigating parking lots and patios. Rolled into a backyard, it offers USB ports to power up phones, laptops and speakers while keeping burgers and brats close at hand, and you out of the kitchen. Ⓑ

ANKER
SOLIX

IT'S THE LITTLE THINGS

# WHAT'S IN A KEY FOB?

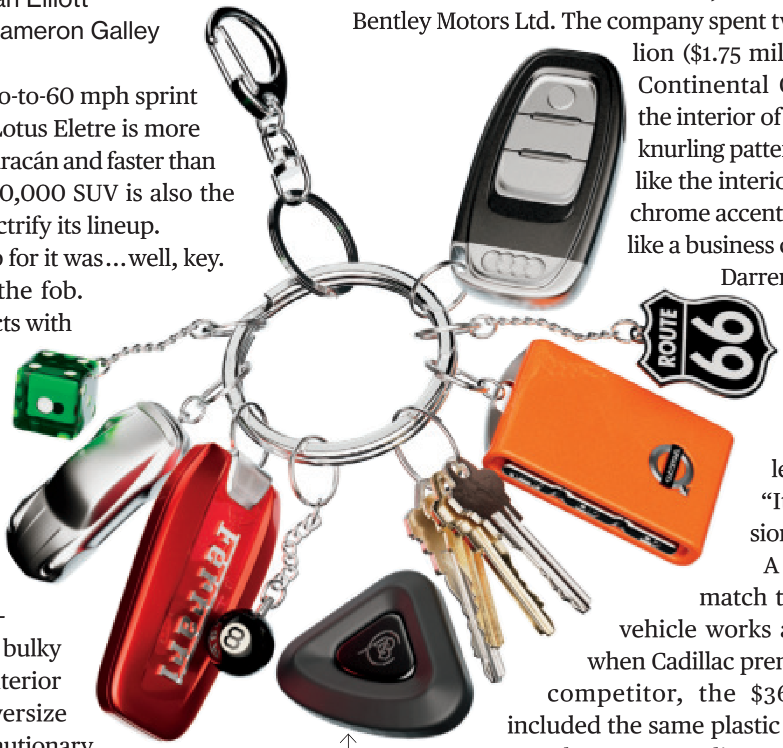
By Hannah Elliott
Illustration by Cameron Galley

With 905 horsepower and a zero-to-60 mph sprint time under three seconds, the Lotus Eletre is more powerful than a Lamborghini Huracán and faster than a Porsche 911 Carrera. The $230,000 SUV is also the foundation of Lotus' plan to electrify its lineup.

So designing the right key fob for it was…well, key.

It's an interesting subject, the fob. The way a consumer first interacts with a car is also one of the least relevant details of the driving experience. Yet it serves as a handshake: A good design will communicate brand values, even status. A lot more thought goes into creating a fob than drivers may realize.

"We didn't want an over-featured key that becomes a big, bulky thing," says Mat Hill, head of interior design at Lotus. BMW AG's oversize "display key" from 2015 was a cautionary tale: A $670 option with so many functions it required a touchscreen, the gadget was discontinued in 2022 because of low consumer interest. "It's not about technology for technology's sake," Hill says. "It's about, 'Does it actually make my life better?'"



The Lotus pebble

For the Eletre, designers spent six months developing a smooth ceramic fob that resembles a guitar pick, also the shape of the Lotus logo. The gray device has one button, which locks and unlocks the vehicle. They nicknamed it "the pebble."

It's ingeniously simple, handsome and–crucially, at less than 3 inches across–small. "If you've got a nice suit on, it doesn't spoil the line when it's in your pocket," Hill says.

That less-is-more sensibility is a rarity in the automotive world. Fobs can now start a car as you approach–and unlock the front door (and rear, separately, if you want), open the trunk to varying heights, adjust the temperature, tell you if the windows are up and give you the battery life and fuel range. With the rise of push-button ignitions, fobs are also functionally the keys too.

We've come a long way since Cadillac introduced a radio-based keyless entry for the Allanté in the 1980s.

A modern fob generally consists of an electronic circuit board, a battery and a switch pack that receives signals from sensors; sometimes a metal emergency key is hidden inside.

The design can speak volumes. Porsche 911 fobs evoke the silhouette of the cars themselves; so do the soft lines of the Mercedes-Benz smart keys that unlock E-Classes; Volvo's rectangular fobs recall the brand's historically brick-shaped fleet. At Audi, Ford, Subaru and Toyota, they've merged into a softly rounded coffinlike shape.

Still others denote serious status, such as the ovoid disks from Bentley Motors Ltd. The company spent two years and €1.5 million ($1.75 million) developing the Continental GT's fob to feel like the interior of the car. The key has a knurling pattern along its edges, just like the interior controls, and shiny chrome accents. "We see the key fob like a business card for Bentley," says Darren Day, head of interior design. The brand's "B" badging went on the top of the key, because that's how people see it when it's left on a table or a bar. "It's that first impression," Day says.

A key that doesn't match the excellence of the vehicle works against it. This year, when Cadillac premiered its Rolls-Royce competitor, the $360,000 Celestiq, it included the same plastic fob found across the General Motors Co. lineup, albeit in a leather sheath with stitches like a baseball mitt. Compared with the slinky lines of the hatchback itself, it's woefully incongruous.

Conversely, while the credit-card-like "keys" for Rivian Automotive Inc.'s R1T and Tesla Inc.'s Cybertruck may repel Luddites, they match the high-tech feel of those electric vehicles. They also signal an inflection point. "In the future, the key fob will be obsolete," says Rebecca Lindland, managing director of automotive at Allison Worldwide, a marketing consulting firm. Hyundai Motor Co. put fingerprint sensors in its SUVs as far back as 2019; Ford Motor Co. is developing facial recognition.

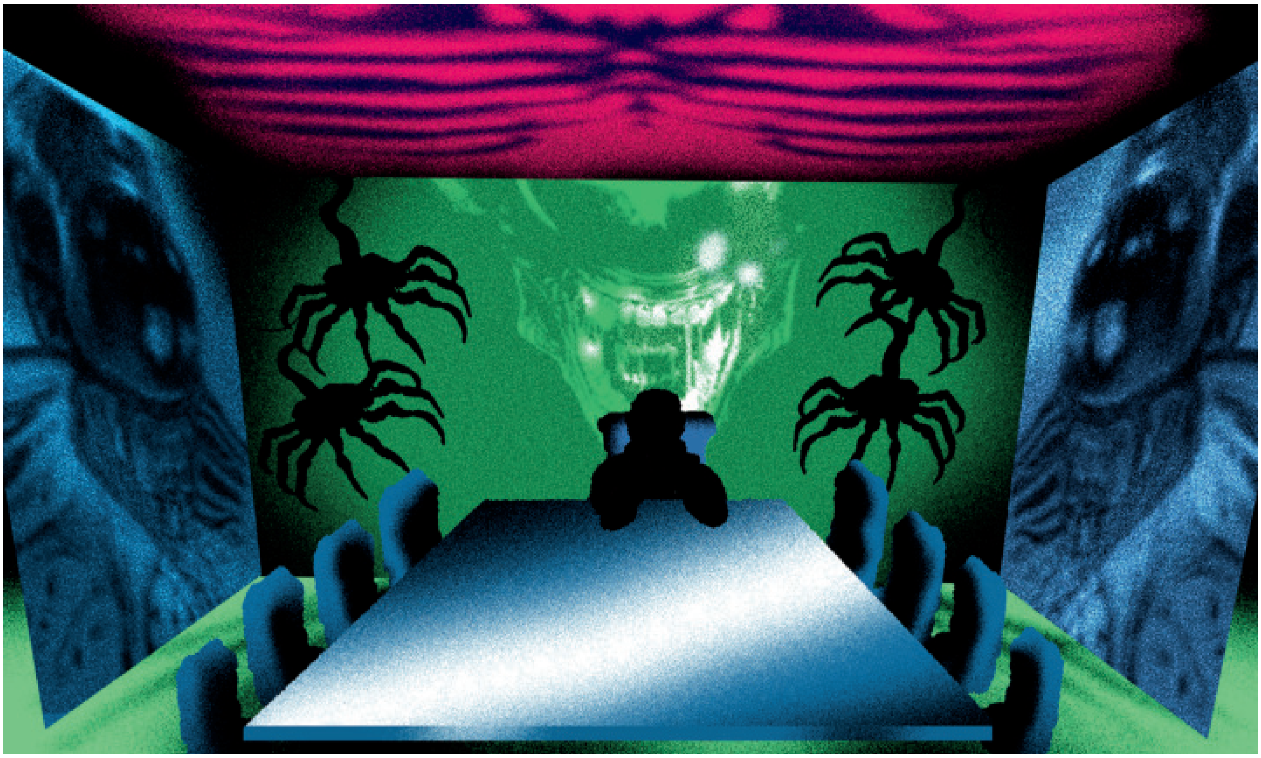
Lindland operates her Alfa Romeo Stelvio exclusively via app. "The whole ecosystem needs to feel like an extension of my phone," she says. A low battery doesn't faze her the way losing an actual key does; it's always easier, quicker and cheaper to charge a dead cellphone than to order a new fob. "At least with the app, there's a support system," Lindland says.

In fact, Lotus' Hill says half of Eletre buyers don't even care how cool the pebble looks. "Early adopters are heavy users of the app," he says. "A key can be a nuisance." His father-in-law, however, still wants to feel something in his pocket when he leaves the car. "It's that bit of cognitive recognition," Hill says. And the pebble holds one clear advantage over his phone: With its tough ceramic shell, it will fare better if he drops it. Ⓑ

EVIL INC.

# Close Encounters of the Corporate Kind

By Esther Zuckerman
Illustrations by Daniel Zender



Watch enough of the *Alien* franchise and you'll realize this: The giant drooling monsters are not the real villains. Sure, they're grotesque parasites that kill humans in elaborate, horrific ways. But the true fiend is the company pulling the strings.

Ridley Scott's seminal 1979 film, *Alien*, was essentially about blue-collar workers who are sent on a suicide mission by a faceless conglomerate that doesn't give a hoot about its employees. James Cameron's equally beloved sequel, *Aliens*, put a 1980s spin on that concept, giving us a villain in the form of a greedy middle manager, played by Paul Reiser, who wants to monetize the acid-blooded xenomorphs as weapons of mass destruction. Last year's *Alien: Romulus* really drove the point home, focusing on a group of young people desperate to escape their indentured servitude in a rain-shrouded mining colony.

Now, the FX television series *Alien: Earth*, out Aug. 12, doubles down on the class warfare.

"All I really did was try to look one or two steps ahead of where we are now," says series creator Noah Hawley. "I thought, 'Is it realistic to think that billionaires are going to become trillionaires?' Yeah, that seems realistic. 'Is it realistic to think that corporations are going to take on more power and governments are going to take on less?' That's believable."

The result is a show that takes place almost 100 years in the future but feels bracingly relevant. Set between the events of Scott's prequels *Prometheus* and *Alien: Covenant* and the original *Alien*, the eight-episode first season of *Alien: Earth* imagines a planet governed by five corporations all battling for supremacy. There's, yes, Weyland-Yutani Corp., long the evil center of the *Alien* universe, but there's also Prodigy, run by Boy Kavalier (Samuel Blenkin), an erratic, youthful tech guru–a "boy genius," if you will.

In the pilot episode, Boy enacts his plan to put human consciousness in synthetic bodies, beginning with a sick young girl who gets another chance at life and an indestructible skin. In that new form she's played by the adult Sydney Chandler. Synthetics (humanoid robots) have long been a part of the *Alien* saga–going back to Ian Holm's duplicitous Ash in the first film–but this is a disturbing new take. Shortly thereafter, a Weyland-Yutani ship containing the familiar teeth-baring beastie crash-lands on Earth. Surely, this will all go great for humanity.

Hawley is best known as the creator of FX's other experiment with well-known intellectual property, *Fargo*, an anthology of Midwestern crime sagas based on the Coen brothers' movie. He approached

*Alien: Earth* in much the same way, making a show that completely stands alone, all while creating a lore that hadn't been explored in the seven movies.

"There wasn't a density of mythology here," says David W. Zucker, an executive producer and the chief creative officer of Scott Free Productions, Ridley Scott's company. "There was a lot of space for him to say, 'OK, there are some fundamental philosophical, humanistic and thematic concepts that one can really drive one's hands into.' "

Hawley didn't think *Alien: Earth*–with its tech guys who want to run governments and AI run amok–would reflect the current zeitgeist quite so closely. He says he first conceived the series before ChatGPT appeared in November 2022. "That's how quickly and how amazing the progress has been."

During the writing process, Hawley actually looked back to look forward. "I thought of a parallel to 1900 where you had Tesla and Westinghouse and Edison. Somebody's going to control electricity, and it's a war over that," he says. "When the show starts, we have neural link cybernetic prosthetic limbs. Are we going to enhance our own biology? Is it artificial intelligence, synthetic beings? Or will it be transhumanism of human minds in synthetic bodies?" Whoever's tech wins the race wins the universe.

The show focuses on Boy, who thinks putting the brains of dying children in superstrong robot bodies is the way to dominate. He imagines himself as a Peter Pan figure, with these hybrid synthetics as his Lost Boys. Boy's childish qualities are the point and suggest an obvious parallel to real tech titans Sam Altman, Mark Zuckerberg and Elon Musk.

"No one could have envisioned this all-powerful singular entity that was in many ways still a child," Hawley says of this particular brand of ego. "And that all the grown-ups would have to tiptoe around and go, 'No, you're right, your majesty, we should turn off all the filters for hate speech.' It's such a modern moment that we're in, and I feel like that's what Boy Kavalier represents."

Hawley didn't make Blenkin, the English actor who plays Boy, study these contemporary examples–though comparisons were unavoidable. Instead, Hawley directed the performer to a classic *Twilight Zone* episode about a telepathic kid. Meanwhile, Blenkin would regularly listen to the audiobook of Jon Ronson's *The Psychopath Test* all while considering whether Boy fit that description. (Hawley is adamant that the character isn't a psychopath.) Playing Boy was fun, Blenkin tells me–and thus eerie.

"Those dominoes are falling in the real world right now," Blenkin says, noting the accelerating power of tech conglomerates. "Imagine what happens in 200 years, when governments become irrelevant." It's quite a "spooky thing," he says, to be part of a series where that's already happened.

Of course, the fans who are tuning in to *Alien: Earth* to watch a xenomorph hunt and kill a bunch of people will get what they want. The initial episode has a massacre on a ship that looks not unlike the *Nostromo* from the 1979 film.

Still, it's the character drama that Hawley and his collaborators say they're focusing on to sustain the series for multiple seasons. "What I find really unique about this show, which is quite different than my experience of the films, is I keep losing clarity over who I'm rooting for and what I want to happen," Zucker says. "Because you have these corporate powers that are so horrifying in their declarative intentions, and then there are still things that come out of Boy Kavalier's mouth where, well, that's aspirational."

And though Scott and Cameron might have been able to envision a world where human jobs could one day entail the risk of an alien bursting out of one's chest, they couldn't have predicted the strangeness of the present day, where we're at the mercy of very rich people playing with very dangerous toys.

Hawley wanted to consider what happens when you take the aliens out of *Alien*: That's why the story became one of a cold war between corporations vying for control of humanity, he says. The threat to people comes from these creatures but also "from the road that we're on already."

Turns out, that's just as scary.

## Pursuits Picks For August

By James Tarmy

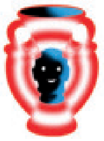
MOVIES

*Freakier Friday*

God bless the Disney executive who continues to exhume cult favorites. First it was *Hocus Pocus 2*; now it's a sequel to the 2003 slapstick body-swap comedy *Freaky Friday* starring Jamie Lee Curtis and Lindsay Lohan. Both actresses are back, older if not wiser, joined by younger stars who, through magic circumstances, wake up to a stranger's face in the mirror. *Aug. 8*

BOOKS

*A Noble Madness: The Dark Side of Collecting From Antiquity to Now* by James Delbourgo



Possibly the greatest marketing coup of the last 2,000 years was to spin compulsive shopping as "collecting." (Surely, this ruse originated on the sell side.) Delbourgo, a historian at Rutgers University, peers into the mania of rabid acquisition by Roman emperors, Victorian aesthetes and more. *Aug. 12; W.W. Norton & Co.*

STREAMING

*Chief of War*

Jason Momoa wrote, executive-produced and stars in this sweeping historical epic. The nine-episode series follows Ka'iana (Momoa), a warrior attempting to unify the islands of Hawaii in the 18th century amid the encroaching advance–and existential peril–of Western colonization. *Aug. 1; Apple TV+*

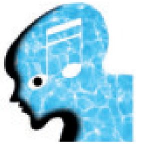
THEATER

*Twelfth Night* at Free Shakespeare in the Park

Refreshed after an 18-month renovation, the open-air Delacorte Theater in New York's Central Park welcomes audiences with a star-studded production of Shakespeare's romantic comedy. Lupita Nyong'o plays Viola, who's been separated from her twin, Sebastian (played by Lupita's younger brother, Junior Nyong'o). Sandra Oh plays Olivia, a countess who falls in love with Viola, thinking she's a man. Peter Dinklage is Malvolio, Olivia's supercilious steward. *Aug. 7-Sept. 14*

MUSIC

Newport Jazz Festival



The three-day festival returns to the waterside at Rhode Island's scenic Fort Adams State Park. On four separate stages, A-list headliners the Roots, Janelle Monáe and Terence Blanchard will be joined by a younger generation to showcase the global best of contemporary jazz. *Aug. 1-3*

# Re: Business

● By Chris Benedict and Alban Lefebvre

Time to think literally and visually. On this page are 12 rebus puzzles—a fancy term for puzzles you solve by deciphering how things look or are presented. Each points to some oft-used term from business or finance. We’ve done the first for you to help get you situated. To check your answers, turn to page 6.

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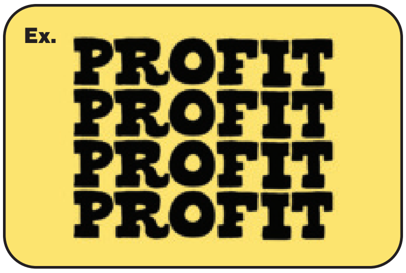

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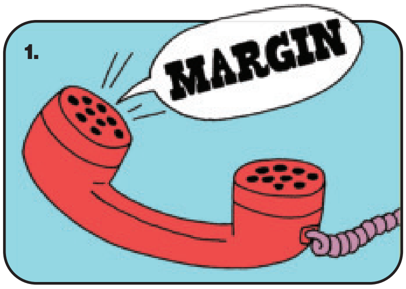

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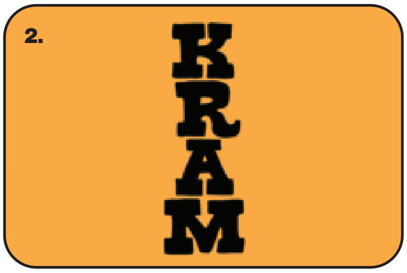

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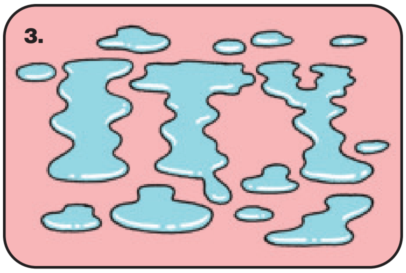

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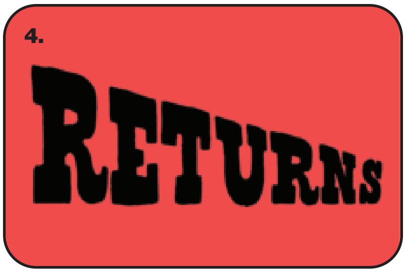

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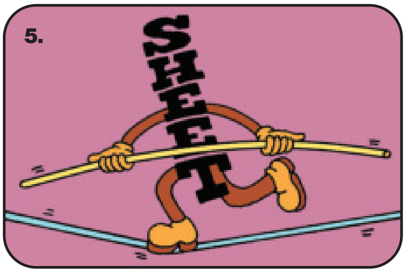

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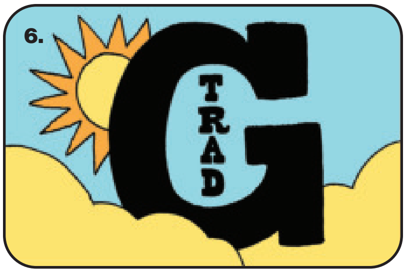

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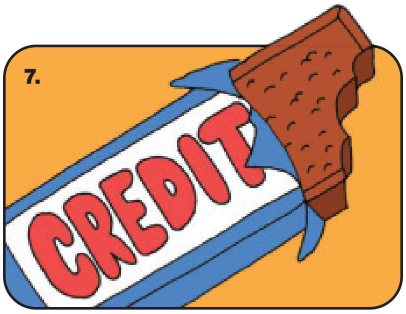

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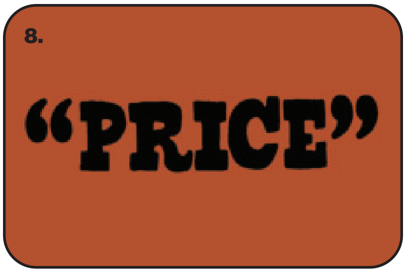

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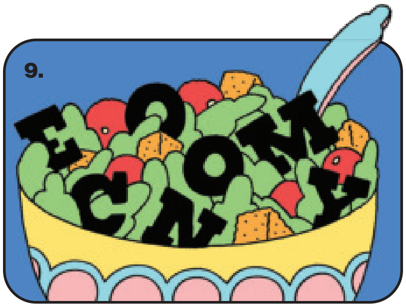

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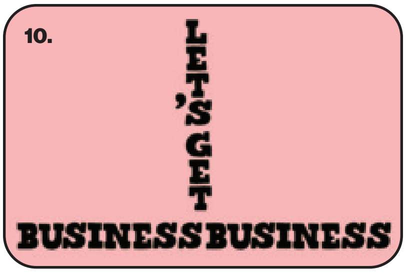

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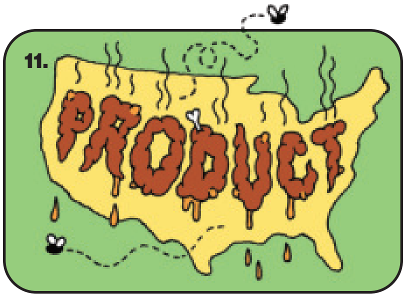

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■ ILLUSTRATIONS BY CLAY HICKSON

**Bloomberg Businessweek** (USPS 080 900) August 2025 (ISSN 0007-7135) Issue no. 4834 Published monthly by Bloomberg L.P. Periodicals postage paid at New York, N.Y., and at additional mailing offices. Executive, Editorial, Circulation, and Advertising Offices: Bloomberg Businessweek, 731 Lexington Avenue, New York, NY 10022. POSTMASTER: Send address changes to Bloomberg Businessweek, P.O. Box 37528, Boone, IA 50037-0528. Canada Post Publication Mail Agreement Number 41989020. Return undeliverable Canadian addresses to DHL Global Mail, 355 Admiral Blvd., Unit 4, Mississauga, ON L5T 2N1. Email: contactus@bloombergsupport.com. QST#1008327064. Registered for GST as Bloomberg L.P. GST #12829 9898 RT0001. Copyright 2025 Bloomberg L.P. All rights reserved. Title registered in the U.S. Patent Office. Single Copy Sales: Call 800-635-1200 or email: bwkcustserv@cdsfulfillment.com. Educational Permissions: Copyright Clearance Center at info@copyright.com. Printed in the U.S.A. CPPAP NUMBER 0414N68830

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REACH FOR THE CROWN

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